

# INSTALLATION DEVELOPMENT ENVIRONMENTAL ASSESSMENT TRAVIS AIR FORCE BASE, CALIFORNIA FINAL

---



## 60<sup>th</sup> AIR MOBILITY WING



November 2007

---

*Printed on 100% Recycled Paper*

Report Documentation Page		Form Approved OMB No. 0704-0188
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.		
1. REPORT DATE <b>NOV 2007</b>	2. REPORT TYPE	3. DATES COVERED <b>00-00-2007 to 00-00-2007</b>
4. TITLE AND SUBTITLE <b>Installation Development Environmental Assessment Travis Air Force Base, California</b>		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER	
	5e. TASK NUMBER	
	5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Science Applications International Corporation, 1710 SAIC Drive, McLean, VA, 22102</b>		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>		
13. SUPPLEMENTARY NOTES		

#### 14. ABSTRACT

Travis AFB utilizes numerous wing-approved plans to project installation development requirements. These plans propose demolition, construction, renovation, and infrastructure improvement activities intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. These activities include installation development projects contained in the Travis AFB General Plan and the community of all existing approved development plans. Travis AFB seeks to improve the continuing installation development process by evaluating, in a single EA, all actions proposed in the Travis AFB wing-approved community of plans for installation development. The scope of this Installation Development EA (IDEA) includes an evaluation of alternatives for the various projects and analysis of the cumulative effects on the natural and man-made environments. The Proposed Action includes numerous projects, such as new facility construction infrastructure projects, community housing, and demolition of aging facilities that would be completed/implemented during the next five years. The intent of this IDEA is to address the Proposed Action of implementing installation development actions as found in the community of all existing approved management plans for the installation concerning continuing development on Travis AFB. Through this IDEA, Travis AFB provides a constraints-based environmental impact analysis of installation development actions projected for the installation over the next five years. A constraints approach enables Travis AFB to evaluate environmental concerns that exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development. This EA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative. If potentially significant impacts are determined to be associated with the Proposed Action during the course of preparing this IDEA, it may be necessary to prepare an Environmental Impact Statement (EIS). Resource areas addressed in the EA include noise, land use, air quality, safety geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste management. The EA will be made available to the public for comments during development and upon completion.

#### 15. SUBJECT TERMS

##### 16. SECURITY CLASSIFICATION OF:

a. REPORT  
**unclassified**

b. ABSTRACT  
**unclassified**

c. THIS PAGE  
**unclassified**

##### 17. LIMITATION OF ABSTRACT

**Same as  
Report (SAR)**

##### 18. NUMBER OF PAGES

**119**

##### 19a. NAME OF RESPONSIBLE PERSON

## **FINDING OF NO SIGNIFICANT IMPACT**

### **ENVIRONMENTAL ASSESSMENT OF INSTALLATION DEVELOPMENT AT TRAVIS AIR FORCE BASE, CALIFORNIA**

---

#### **INTRODUCTION**

In an effort to improve installation planning, streamline compliance with the National Environmental Policy Act (NEPA), and accomplish installation development, the United States Air Force Headquarters Air Mobility Command and 60<sup>th</sup> Air Mobility Wing initiated an environmental assessment of all reasonably foreseeable projects, planned and programmed for the next five years at Travis Air Force Base (AFB). Since the establishment of Travis AFB, installation development has been a continuing activity. Each year, structures are demolished, facilities are constructed, and infrastructure is upgraded. This decision document is based on an installation development environmental assessment (IDEA) attached to and incorporated herein by reference. The IDEA analyzes the proposed action of implementing installation development projects on Travis AFB that avoid environmentally sensitive areas.

The proposed action includes projects scheduled to be executed during the next five years including facility construction, repair or renovation, upgrades to utilities and infrastructure, and the demolition of unneeded facilities. The scope of the IDEA includes an evaluation of alternatives for the projects and an analysis of their direct, indirect and cumulative effects on the natural and man-made environments.

#### **PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

The purpose of the proposed action is to implement installation development projects found within all community plans for Travis AFB, including the base general plan. All wing-approved plans for Travis AFB were examined to produce a consolidated list of projects planned and programmed at Travis AFB over the next five years. The proposed action does not include any projects identified to have the potential to impact wetlands, floodplains, or areas where threatened and endangered species are known to occur.

The need for the proposed action is to support the air mobility and total force missions of Travis AFB. This need involves meeting ongoing mission requirements while supporting the quality of life of the warfighter and preparing Travis AFB to accept additional missions in the future.

#### **DESCRIPTION OF THE PROPOSED ACTION**

The proposed action is to implement the installation development projects found in the integrated plans for Travis AFB. The projects in the proposed action analyzed by the IDEA fall under three categories: demolition, construction including renovations, alterations, and repairs, and infrastructure projects. The IDEA used information obtained from other environmental impact analysis process documents for similar actions to determine the direct, indirect, and cumulative impacts of the projects.

**Demolition Projects.** Travis AFB proposes 15 demolition projects that could occur over the next five years to achieve efficiency and support growth associated with its mission requirements. The facilities scheduled for demolition have been deemed too costly to repair or renovate, and no longer meet the needs of Travis AFB. The demolition of these facilities would provide approximately 447,550 square feet of usable land and reduce the need to construct new facilities on undeveloped land

**Construction Projects.** Travis AFB proposes seven facility construction, renovation, repair, and alteration projects over the next five years to support mission requirements and comply with anti-terrorism/force protection criteria. These facilities would occupy approximately 236,437 square feet. All new facilities would be constructed in areas zoned to ensure compatible land use.

**Infrastructure Projects.** Travis AFB proposes three infrastructure projects over the next five years. These projects include paving parking lots and installing bulk fuel lines to improve the base infrastructure capacity.

#### **SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS**

Minor, short-term, direct, adverse effects resulting from construction and demolition activities would affect the noise environment, air quality, safety, geological resources, water resources, biological resources, and hazardous materials and wastes. Adverse effects associated with construction and demolition activities would be localized to the immediate area of work and would subside following the end of construction and demolition activities in each affected area. Construction would cause a minor, short-term benefit to the socioeconomics of the local community due to construction employment and the purchase of local goods and services. Proposed construction and some infrastructure projects would result in an overall increase in impervious surfaces and loss of vegetation.

Minor, long-term, direct, beneficial effects on land use, air quality, safety, and hazardous materials and wastes would be expected from the demolition of unneeded facilities and the construction of modern, efficient infrastructure.

Minor, short-term, adverse effects and long-term, beneficial effects would be expected due to the removal of asbestos and lead-based paint in older buildings. All abatement would be accomplished in accordance with federal, state and local regulations. Construction proximate to any contaminated sites would be accomplished in accordance with federal and state regulations.

The proposed action does not include siting projects in wetlands, floodplains, or areas where threatened or endangered (T&E) species are known to occur. Construction activities determined to have the potential to affect federally-listed T&E species, state-protected species or their habitat would involve separate consultation with the appropriate federal and state agencies. Similarly, any project analyzed in the IDEA, that is subsequently identified to impact a wetland or floodplain, would be coordinated with the appropriate Federal and state regulatory authorities to obtain necessary approval and ensure best management practices are used to minimize erosion and sedimentation. Additional environmental analysis would be required if the potential to adversely impact wetlands, threatened or endangered species, or other protected natural resources is identified during project design or execution.

No adverse effects on cultural resources would be expected because no project with a potential to affect cultural resources was included in the proposed action. The Travis AFB integrated cultural resources management plan requires that all planned construction or demolition

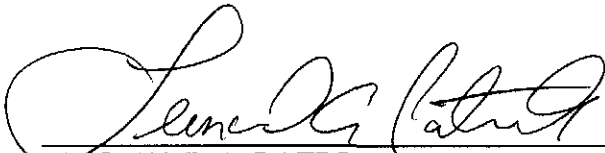
activities subsequently identified to have a potential to affect an historical resource, will be coordinated with the California State Historic Preservation Officer prior to the undertaking in accordance with section 106 of the National Historic Preservation Act.

#### **PUBLIC REVIEW AND INTERAGENCY AND INTERGOVERNMENTAL COORDINATION**

In accordance with Air Force policy, the interagency and intergovernmental coordination for environmental planning (IICEP) was initiated on 24 May 2007. Public and IICEP review of the draft IDEA was conducted from 17 October to 16 November, 2007. A letter was received from the State of California Public Utilities Commission, and is attached to the IDEA.

#### **FINDING OF NO SIGNIFICANT IMPACT**

I conclude that the environmental effects of the proposed installation development at Travis AFB are not significant, that preparation of an environmental impact statement is unnecessary, and that a finding of no significant impact is appropriate. The preparation of the IDEA is in accordance with the NEPA, the regulations of the Council on Environmental Quality, and Title 32, Code of Federal Regulations Part 989, as amended.



LEONARD A. PATRICK  
Brigadier General (Sel), USAF  
Director, Installations & Mission Support

19 Dec 07

Date

Attachment: Installation Development Environmental Assessment

**THIS PAGE INTENTIONALLY LEFT BLANK**

## ***ABBREVIATIONS AND ACRONYMS***

°C	degrees Celsius	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
µg/m <sup>3</sup>	micrograms per cubic meter		
60 AMW	60 <sup>th</sup> Air Mobility Wing	CESA	California Endangered Species Act
60 CES/CEV	60 <sup>th</sup> Civil Engineering Squadron	CFR	Code of Federal Regulations
	Environmental Management Flight	CNDDB	California Natural Diversity Database
ABAG	Association of Bay Area Governments	CNEL	Community Noise Equivalent Level
ACM	asbestos-containing material	CNPS	California Native Plant Society
ADC	Air Defense Command	CO	carbon monoxide
AFB	Air Force Base	CvD2	Corning gravelly loam
AFI	Air Force Instruction	CWA	Clean Water Act
AFIERA	Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis	dB	decibel
AFOSH	Air Force Occupational Safety and Health	dBA	A-weighted decibel
AFPD	Air Force Policy Directive	DbE	Dibble-Los Osos loam
AFRC	Air Force Reserve Command	DIC	Dibble-Los Osos clay loams
AFSWP	Armed Forces Special Weapons Project	DoD	Department of Defense
		DOL	Department of Labor
AGL	above ground level	DOT	United States Department of Transportation
AIC	Altamont - San Ysidro - San Benito complex	EA	Environmental Assessment
AICUZ	Air Installation Compatibility Use Zone	EDC	Dichloroethane
		EIAP	Environmental Impact Analysis Process
AMC	Air Mobility Command	EIS	Environmental Impact Statement
AMOG	Air Mobility Operations Group	EO	Executive Order
ANSI	American National Standards Institute	EOD	Explosive Ordnance Disposal
		EPCRA	Emergency Planning and Community Right-to-Know Act
AoA	Antioch - San Ysidro complex		
APZ	Accident Planning Potential Zone	ERP	Environmental Restoration Program
ARPA	Archaeological Resources Protection Act	ESA	Endangered Species Act
AT/FP	Anti-Terrorism/Force Protection	FAA	Federal Aviation Administration
BAAQMD	Bay Area Air Quality Management District	FICON	Federal Interagency Committee on Noise
BAC	Bay Area Census	FICUN	Federal Interagency Committee on Urban Noise
BASH	Bird-Aircraft Strike Hazards	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
BEA	United States Bureau of Economic Analysis	FONPA	Finding of No Practicable Alternative
BMP	Best Management Practices	FR	Federal Register
BP	Borrow Pit	FSSD	Fairfield-Suisun Sanitary District
BRAC	Base Realignment and Closure	FTS	Fairfield/Suisun Transit System
C&D	construction and demolition	FUB	Facilities Utilization Board
Ca	Capay Silty Clay loam	gpm	gallons per minute
CAA	Clean Air Act	HAP	High Accident Potential
CAAQS	California Ambient Air Quality Standards	HQ AMC	Headquarters Air Mobility Command
Caltrans	California Department of Transportation	HSWP	health and safety work plan
CATEX	Categorical Exclusion	HUD	Department of Housing and Urban Development
Cc	Capay clay		
CDFG	California Department of Fish and Game	HVAC	Heating, Ventilation, and Air Conditioning
CeA	Clear Lake clay	Hz	hertz
CEQ	Council on Environmental Quality	I-80	Interstate 80

ICRMP	Integrated Cultural Resources Management Plan	RCNM	Roadway Construction Noise Model
IDEA	Installation Development Environmental Assessment	RCRA	Resource Conservation and Recovery Act Recovery Act
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	RI	Remedial Investigation
INRMP	Integrated Natural Resource Management Plan	ROD	Record of Decision
kV	kilovolt	ROI	Region of Influence
LBP	lead-based paint	RWQCB	Regional Water Quality Control Board
L <sub>eq</sub>	equivalent sound level	SAC	Strategic Air Command
L <sub>eq(8)</sub>	8-hour equivalent sound level	SARA	Superfund Amendments and Reauthorization Act
L <sub>eq(24)</sub>	24-hour equivalent sound level	SC	species of concern
L <sub>max</sub>	maximum sound level	SeA	San Ysidro sandy loam
MAJCOM	Major Command	SEL	Sound Exposure Level
MFH	Military Family Housing	SF	Square Feet
mgd	million gallons per day	Sh	Solano loam
MILCON	Military Construction	SHPO	State Historic Preservation Office
MkA	Millsap sandy loam	SIC	Standard Industrial Code
MmE	Millsholm loam	SIP	State Implementation Plan
MSA	Metropolitan Statistical Area	SO <sub>2</sub>	sulfur dioxide
MSL	mean sea level	SO <sub>x</sub>	sulfur oxides
MSW	municipal solid waste	SSC	species of special concern
NAAQS	National Ambient Air Quality Standards	STP	sewage treatment plant
NAF	Non-appropriated Funds	SWPPP	Storm Water Pollution Prevention Plan
NAGPRA	Native American Graves Protection and Repatriation Act	SWRCB	State Water Resources Control Board
NEPA	National Environmental Policy Act	TCE	Trichloroethylene
NEWIOU	North, East, and West Industrial Operable Unit	U.S.	United States
NHPA	National Historic Preservation Act	UFC	Unified Facilities Criteria
NO <sub>2</sub>	nitrogen dioxide	USACE	United States Army Corps of Engineers
NO <sub>x</sub>	nitrogen oxides	USAF	United States Air Force
NPDES	National Pollutant Discharge Elimination System	USC	United States Code
NRCS	Natural Resources Conservation Service	USEPA	United States Environmental Protection Agency
NRHP	National Register of Historic Places	USFWS	United States Fish and Wildlife Service
NRMU	Natural Resources Management Units	USGS	United States Geological Survey
O&M	Operations and Maintenance	VA	Veteran's Administration
O <sub>3</sub>	ozone	VOC	volatile organic compound
Om	Omni clay loam	VWTP	Vallejo Water Treatment Plant
Pb	lead	WABOU	Vallejo Water Treatment Plant West/Annexes/Basewide Operable Unit
Pc	Pescadero clay loam	WQO	Water Quality Order
PG&E	Pacific Gas & Electric Company	WRM	War Reserve Materiel
PM <sub>10</sub>	particulate matter less than or equal to 10 micrometers in diameter		
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 micrometers in diameter		
POL	petroleum oil & lubricants		
ppm	parts per million		
PSD	prevention of significant deterioration		
PVC	polyvinyl chloride		
QD	Quantity Distance		

## **Cover Sheet**

### **Environmental Assessment of Installation Development at Travis Air Force Base, California**

**Responsible Agencies:** United States Air Force (USAF), Air Mobility Command (AMC), The 60<sup>th</sup> Air Mobility Wing (60 AMW), Travis Air Force Base (AFB), California

**Affected Location:** Travis AFB, Solano County, California

**Proposed Action:** Implementation of approved installation development plans

**Report Designation:** Environmental Assessment (EA)

**Written comments and inquiries regarding this document should be directed to:** Mr. Rudy Pontemayor, 60 CES/CEVP, 411 Airmen Drive, Travis AFB, CA 94535-2176; Telephone: (707) 424-7517.

**Abstract:** Travis AFB utilizes numerous wing-approved plans to project installation development requirements. These plans propose demolition, construction, renovation, and infrastructure improvement activities intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. These activities include installation development projects contained in the Travis AFB General Plan and the community of all existing approved development plans. Travis AFB seeks to improve the continuing installation development process by evaluating, in a single EA, all actions proposed in the Travis AFB wing-approved community of plans for installation development. The scope of this Installation Development EA (IDEA) includes an evaluation of alternatives for the various projects and analysis of the cumulative effects on the natural and man-made environments. The Proposed Action includes numerous projects, such as new facility construction, infrastructure projects, community housing, and demolition of aging facilities that would be completed/implemented during the next five years. The intent of this IDEA is to address the Proposed Action of implementing installation development actions as found in the community of all existing approved management plans for the installation concerning continuing development on Travis AFB.

Through this IDEA, Travis AFB provides a constraints-based environmental impact analysis of installation development actions projected for the installation over the next five years. A constraints approach enables Travis AFB to evaluate environmental concerns that exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development.

This EA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative. If potentially significant impacts are determined to be associated with the Proposed Action during the course of preparing this IDEA, it may be necessary to prepare an Environmental Impact Statement (EIS). Resource areas addressed in the EA include noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste management. The EA will be made available to the public for comments during development and upon completion.

### **Privacy Advisory**

Your comments on this EA are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

**THIS PAGE INTENTIONALLY LEFT BLANK**

**INSTALLATION DEVELOPMENT  
ENVIRONMENTAL ASSESSMENT  
TRAVIS AIR FORCE BASE, CALIFORNIA  
FINAL**

---

**HEADQUARTERS AIR MOBILITY COMMAND  
COMMUNITY PLANNING BRANCH  
507 SYMINGTON DRIVE  
SCOTT AIR FORCE BASE, ILLINOIS 62225-5022**

**November 2007**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## TABLE OF CONTENTS

<b><u>Section</u></b>	<b><u>Page</u></b>
1.0 Purpose, Need, and Scope .....	1-1
1.1 Background .....	1-1
1.2 Purpose of and Need for the Proposed Action .....	1-3
1.3 Scope of the Analysis .....	1-3
1.4 Summary of Key Environmental Compliance Requirements .....	1-4
1.4.1 National Environmental Policy Act (NEPA) .....	1-4
1.4.2 Integration of Other Environmental Statutes and Regulations .....	1-4
1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning .....	1-5
1.5 Organization of this Document .....	1-5
2.0 Description of the Proposed Action and Alternatives .....	2-1
2.1 Proposed Action .....	2-1
2.1.1 Major Installation Constraints .....	2-4
2.1.2 Demolition Projects .....	2-6
2.1.3 Construction Projects .....	2-7
2.1.4 Infrastructure Projects .....	2-7
2.1.5 Summary of Proposed Activities .....	2-8
2.2 Alternatives .....	2-8
2.2.1 Alternative 1 – Acquire Additional Land Surrounding Travis AFB .....	2-8
2.2.2 Alternative 2 – Lease Additional Facilities in the Surrounding Community .....	2-9
2.3 Decision to be Made and Identification of the Preferred Alternative .....	2-10
3.0 Affected Environment .....	3-1
3.1 Noise .....	3-1
3.1.1 Definition of Resource .....	3-1
3.1.2 Existing Conditions .....	3-3
3.2 Land Use .....	3-4
3.2.1 Definition of Resource .....	3-4
3.2.2 Existing Conditions .....	3-4
3.3 Air Quality .....	3-5
3.3.1 Definition of the Resource .....	3-5
3.3.2 Existing Conditions .....	3-8
3.4 Safety .....	3-8
3.4.1 Definition of the Resource .....	3-8
3.4.2 Existing Conditions .....	3-9
3.5 Geologic Resources .....	3-10
3.5.1 Definition of the Resource .....	3-10
3.5.2 Existing Conditions .....	3-11
3.6 Water Resources .....	3-13
3.6.1 Definition of the Resource .....	3-15
3.6.2 Existing Conditions .....	3-15
3.7 Biological Resources .....	3-17
3.7.1 Definition of the Resource .....	3-17
3.7.2 Existing Conditions .....	3-18
3.8 Cultural Resources .....	3-20
3.8.1 Definition of the Resource .....	3-20
3.8.2 Existing Conditions .....	3-21

**TABLE OF CONTENTS (Continued)**

<b><u>Section</u></b>	<b><u>Page</u></b>
3.9 Socioeconomics .....	3-24
3.9.1 Definition of the Resource .....	3-24
3.9.2 Existing Conditions .....	3-25
3.10 Infrastructure .....	3-28
3.10.1 Definition of the Resource .....	3-28
3.10.2 Existing Conditions .....	3-28
3.11 Hazardous Materials and Waste .....	3-30
3.11.1 Definition of the Resource .....	3-30
3.11.2 Existing Conditions .....	3-32
4.0 Environmental Consequences .....	4-1
4.1 Noise .....	4-1
4.1.1 Significance Criteria.....	4-1
4.1.2 Environmental Consequences.....	4-2
4.2 Land Use .....	4-3
4.2.1 Significance Criteria.....	4-3
4.2.2 Environmental Consequences.....	4-3
4.3 Air Quality.....	4-5
4.3.1 Significance Criteria.....	4-5
4.3.2 Environmental Consequences.....	4-6
4.4 Safety .....	4-7
4.4.1 Significance Criteria.....	4-7
4.4.2 Environmental Consequences.....	4-7
4.5 Geologic Resources .....	4-8
4.5.1 Significance Criteria.....	4-8
4.5.2 Environmental Consequences.....	4-8
4.6 Water Resources.....	4-9
4.6.1 Significance Criteria.....	4-9
4.6.2 Environmental Consequences.....	4-9
4.7 Biological Resources.....	4-10
4.7.1 Significance Criteria.....	4-10
4.7.2 Environmental Consequences.....	4-10
4.8 Cultural Resources.....	4-13
4.8.1 Significance Criteria.....	4-13
4.8.2 Environmental Consequences.....	4-14
4.9 Socioeconomics .....	4-14
4.9.1 Significance Criteria.....	4-14
4.9.2 Environmental Consequences.....	4-15
4.10 Infrastructure .....	4-15
4.10.1 Significance Criteria.....	4-15
4.10.2 Environmental Consequences.....	4-16
4.11 Hazardous Materials and Waste .....	4-17
4.11.1 Significance Criteria.....	4-17
4.11.2 Environmental Consequences.....	4-17
4.12 No Action Alternative .....	4-19

## TABLE OF CONTENTS (Continued)

<b><u>Section</u></b>	<b><u>Page</u></b>
5.0 Cumulative Impacts and Irreversible and Irretrievable Commitment Of Resources .....	5-1
5.1 Cumulative Impacts.....	5-1
5.2 Irreversible and Irretrievable Impacts .....	5-4
6.0 List of Preparers.....	6-1
7.0 References.....	7-1

## APPENDICES

- A - Proposed Projects Categorized Lists
- B - Federal Applicable Laws, Regulations, Policies, and Planning Criteria
- C - Interagency and Intergovernmental Coordination for Environmental Planning  
Correspondence and Distribution List

## FIGURES

<b><u>Figure</u></b>	<b><u>Page</u></b>
Figure 1.1-1. Location of Travis AFB, CA .....	1-2
Figure 2.1-1. Proposed Projects and Future Land Use on Travis AFB.....	2-2
Figure 2.1-2. Travis AFB Constraints.....	2-3
Figure 2.1-3. Proposed Projects and Constraints on Travis AFB .....	2-5
Figure 3.5-1. Soils Mapping Units at Travis AFB, California.....	3-12
Figure 3.8-1. Location of Proposed Historic Districts and Individually Eligible Cold War-Era Properties.....	3-23

## TABLES

<b><u>Table</u></b>	<b><u>Page</u></b>
Table 2.1-1. Representative Demolition Projects .....	2-7
Table 2.1-2. Representative Construction Projects .....	2-7
Table 2.1-3. Representative Infrastructure Projects .....	2-7
Table 2.1-4. Change in Impervious Surface .....	2-8
Table 3.1-1. Percentage of Population Highly Annoyed By Elevated Noise Levels .....	3-3
Table 3.3-1. National and California Ambient Air Quality Standards .....	3-6
Table 3.3-2. Air Emissions Inventory for the San Francisco Bay Area Air Basin Calendar Year 2002 (tons per year) .....	3-8
Table 3.7-1. Special-Status Species that are Present or Could be Present at Travis AFB ..	3-19
Table 3.8-1. Cold War Buildings Eligible for the NRHP .....	3-22
Table 3.9-1. Population Changes in the Region .....	3-25
Table 3.9-2. Employment of Residents in the ROI, MSA, and State of California—2005 Estimate .....	3-26
Table 3.9-3. Unemployment Levels for Solano County and State of California – 2000 to 2004 Estimate .....	3-26
Table 3.9-4. Income and Poverty Level for Residents in ROI, MSA, and State of California—2005 Estimate.....	3-27
Table 3.9-5. Educational Attainment for Residents in ROI, MSA, and the State of California .....	3-27
Table 3.9-6. Potential Environmental Justice Indicators—2000 Estimate .....	3-28
Table 3.11-1. Summary of ERP Sites Near IDEA Project Sites .....	3-35
Table 4.1-1. Noise Exposure from Demolition/Construction.....	4-2
Table 4.2-1. Proposed Construction and Infrastructure Projects Land Use .....	4-4
Table 4.2-2. Proposed Demolition Projects Land Use.....	4-5
Table 4.3-1. Construction Emissions – Proposed Action.....	4-6
Table 4.7-1. Proposed Demolition Projects .....	4-11
Table 4.7-2. Proposed Construction Projects .....	4-12
Table 4.7-3. Proposed Infrastructure Projects .....	4-12
Table 4.10-1. Project Construction and Demolition Waste Generated for Proposed Action ..	4-17
Table 5.1-1. Ongoing and Proposed Projects at Travis AFB.....	5-2
Table A-1. Proposed Demolition Projects .....	A-1
Table A-2. Construction Projects .....	A-2
Table A-3. Infrastructure Projects .....	A-3

## 1.0 Purpose, Need, and Scope

The 60<sup>th</sup> Air Mobility Wing (60 AMW) at Travis Air Force Base (AFB), California, and the Air Mobility Command (AMC) believe a comprehensive United States Air Force (USAF) Environmental Impact Analysis Process (EIAP) document would improve the continuing activity of installation development and streamline the National Environmental Policy Act (NEPA) compliance process. As a result, 60 AMW and AMC have initiated an evaluation in this Environmental Assessment (EA) of foreseeable and reasonable planned and programmed projects during the next five years that do not impact a sensitive resource or area. Since the establishment of Travis AFB, as with all other USAF installations, a continuing activity of installation development has been occurring. Every year in the history of the installation, structures have been demolished, new facilities constructed, and infrastructure upgraded. This document constitutes an Installation Development Environmental Assessment (or “IDEA”). The intent of this IDEA is to address the Proposed Action of implementing installation development actions as found in the community of all existing approved management plans for the installation concerning continuing development on Travis AFB. These projects are a compilation of installation development activities as described in the Travis AFB General Plan (USAF nda), and all known and approved Base plans. The IDEA coordinates land use planning and infrastructure projects, expedites project execution by using early planning, and encourages agency coordination. In addition to evaluating the projects as described, this IDEA will serve as a baseline for future environmental analysis of mission and training requirements.

This section of the document includes five subsections: background information on the location and mission of Travis AFB, a statement of the purpose of and the need for the Proposed Action, an overview of the scope of the analysis, a summary of key environmental compliance requirements, and an introduction to the organization of this EA.

### 1.1 Background

Travis AFB is a 6,258-acre active USAF installation under the command and control of AMC. Travis AFB is located in northern California, in the central portion of Solano County (**Figure 1.1-1**). Several small and large communities are located within close proximity of the Base. For example, the City of Fairfield is located 7 miles to the west. The City of San Francisco is located approximately 50 miles to the southwest, and Vacaville and Sacramento are located 10 miles to the north and 45 miles to the northeast, respectively. The largest air mobility organization in the USAF, the 60 AMW is the host unit at Travis AFB. In addition to the 60 AMW, Travis AFB is also home to the 15<sup>th</sup> Expeditionary Mobility Task Force, 615<sup>th</sup> Contingency Response Wing, 349<sup>th</sup> Air Mobility Wing (Air Force Reserve Command [AFRC]), and more than 18 other tenant organizations.

The mission of Travis AFB is to provide rapid, responsive, reliable airlift of forces to any point on earth in support of national objectives and to fulfill the global logistics needs of the Department of Defense in sustaining its worldwide activities. The installation’s tenants are responsible for strategic airlift and air refueling missions with a versatile all-jet fleet of C-5 Galaxy and C-17 Globemaster III cargo, and KC-10 Extender refueling aircraft. Known as the “Gateway to the Pacific,” Travis AFB handles more cargo and passenger traffic through its aerial port than any other military air terminal in the United States (U.S.) and is the West Coast terminal for aeromedical evacuation aircraft returning sick or injured patients from the Pacific area.

The 60 AMW is the largest wing in AMC. The wing operates and maintains 37 C-5, 27 KC-10, and 1 C-17 Globemaster III aircraft through six operations and eight logistics squadrons supporting global engagement of troops, supplies, and equipment. Travis AFB received its initial C-17 in August 2006, the first of 13 that are coming to the Base. Part of AMC and the Eighteenth Air Force (Scott AFB), the unit’s primary roles are to provide rapid, reliable airlift of American fighting forces anywhere in the world in support of national objectives and to extend the reach of American and allied air power through mid-air refueling. The 60 AMW can fly support missions anywhere in the world to fulfill its motto of being “America’s First Choice” for providing true Global Reach.

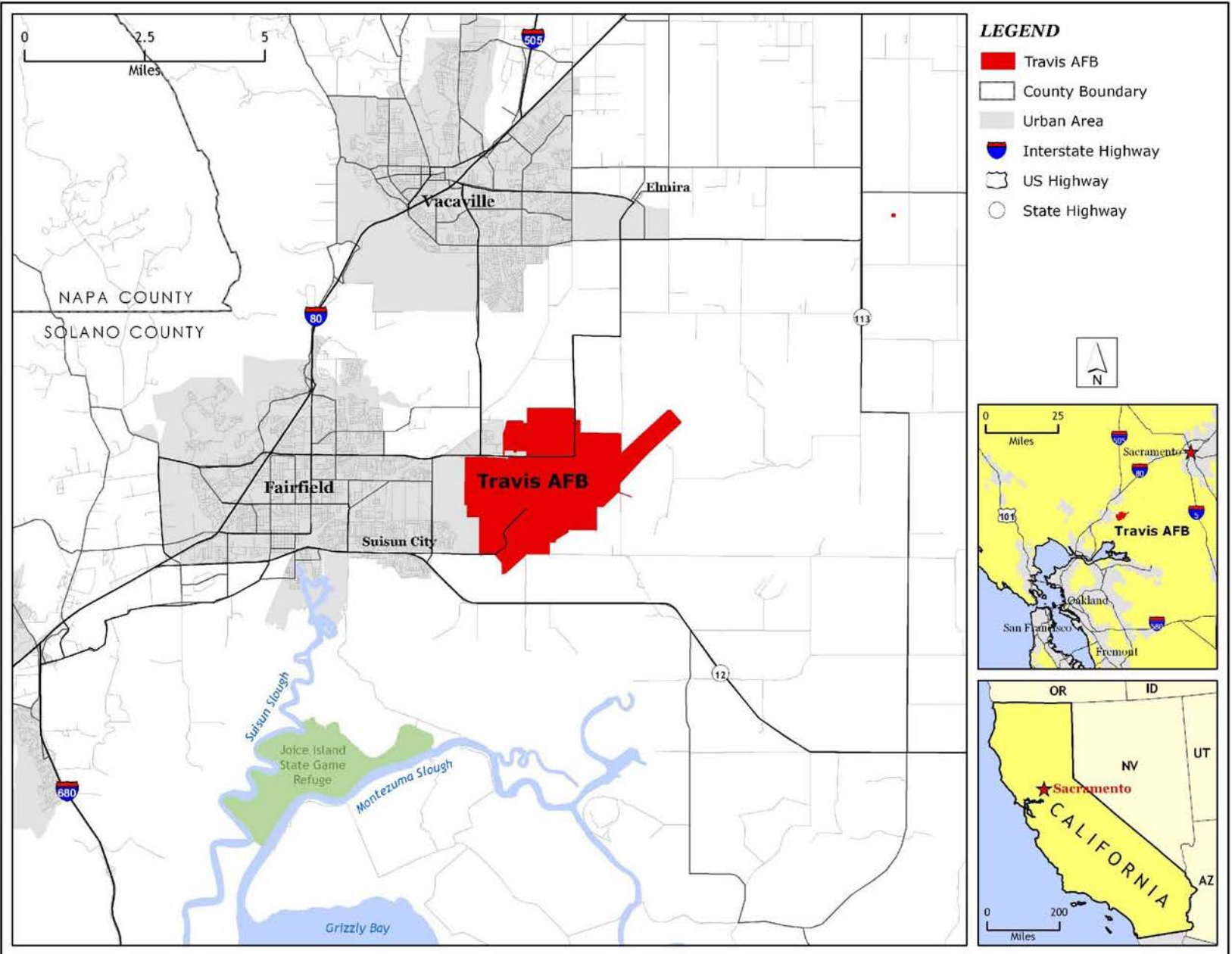


Figure 1.1-1. Location of Travis AFB, CA

## 1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to implement installation development projects on Travis AFB as found in the community of all existing 60 AMW-approved plans for development on the installation. The community of installation development plans is linked to individual funding programs such as Base Realignment and Closure (BRAC), Military Construction (MILCON), Operations and Maintenance (O&M), Military Family Housing (MFH), Anti-Terrorism/Force Protection (AT/FP), Non-appropriated Funds (NAF), and others. Projects approved in the 2005 BRAC process are also included. The Travis AFB community of wing-approved plans was examined to provide a consolidated list of projects that are planned and programmed over the next five years for the continued physical development of the installation to support air mobility. These plans provide a road map for future development of the installation to accommodate future mission and facility requirements. These plans include projects for the installation's future facility development, transportation improvements, airfield and utility infrastructure enhancements, development constraints and opportunities, and land use relationships.

A compilation of projects from the Travis AFB wing-approved community of installation development plans addressed in this IDEA is presented in **Appendix A**. Some of the projects identified in the Travis AFB community of installation development plans are appropriate for the application of Categorical Exclusion (CATEX) rules and are not analyzed in this IDEA.

The need for the Proposed Action is to be able to meet current and future mission requirements and national security objectives associated with Travis AFB. This would involve meeting ongoing mission requirements that necessitate new facility construction, infrastructure projects, community housing, and demolition of aging facilities.

Continued development of infrastructure at Travis AFB must take into account future facilities, construction/demolition/renovation, transportation needs, airfield alterations and enhancements, systems improvements, utilities improvements, land use planning, and development constraints and opportunities. Contributions by Travis AFB to national security, as well as prospects for the assignment of additional missions in the future, dictate that the installation implement planning for the next five years. To ensure the complete usefulness of the installation for any tasks assigned, infrastructure projects must take into account—and be capable of supporting—all functions inherent to a USAF installation. These include aircraft operations and maintenance activities, security, administration, communications, billeting, supply and storage, training, transportation, and community quality of life.

## 1.3 Scope of the Analysis

Travis AFB seeks to improve the continuing installation development process by evaluating, in a single EA, all actions proposed in the Travis AFB wing-approved community of plans for installation development. The scope of the IDEA includes an evaluation of alternatives for the various projects and analysis of the cumulative effects on the natural and man-made environments. The Proposed Action includes numerous projects, such as new facility construction, infrastructure upgrades, community living improvements, and demolition of aging facilities that would be completed/implemented during the next five years.

This IDEA evaluates the impacts of a Proposed Action that encompasses the continuing activities of demolition, construction, and infrastructure repair/improvements inherent to Travis AFB adapting to ever-evolving mission requirements. This IDEA will identify, document, and evaluate the effects of all activities involved in modernizing and upgrading Travis AFB to meet future requirements. The IDEA will present and analyze potentially adverse direct, indirect, and cumulative environmental impacts resulting from implementation of Travis AFB's installation development (the Proposed Action) with emphasis on avoiding impacts on environmentally sensitive areas.

The scope of this EA includes an evaluation of the Proposed Action and No Action alternatives and an analysis of the cumulative effects on the natural and man-made environments of Travis AFB and

surrounding areas. None of the projects contained in this IDEA, as part of the Proposed Action, would impact any environmentally sensitive area such as wetlands, floodplains, endangered species sites, or cultural resources. Projects that impact such areas or other sensitive environmental or socioeconomic resources would be the subject of separate NEPA analysis.

The Proposed Action, as described in **Section 2**, contains three categories of installation development: demolition, construction (to include renovations, installations, alterations, and repairs), and infrastructure (water, wastewater, roads, and utility) projects. The complete categorized lists of proposed projects that comprise the Proposed Action can be found in **Appendix A**. The three categories of installation development were identified for use in this document because they allow for the grouping of development initiatives by common elements of their activity and the nature of their potential environmental impacts. The projects in each category were evaluated not only based on their footprint but also for potential impacts to noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste management. **Section 4** of this IDEA presents an analysis of each of the projects contained in **Appendix A**.

The collective analysis of all appropriate projects in a single EA will streamline the NEPA review process; eliminate project fractionation and segmentation; facilitate coordination of land use planning; reduce installation, reviewing agency, and major command (MAJCOM) workloads; provide cost savings; help better evaluate potential cumulative environmental impacts; assist in maintaining a baseline for future analysis; and meet the USAF's EIAP goals.

## 1.4 Summary of Key Environmental Compliance Requirements

### 1.4.1 National Environmental Policy Act

NEPA is a federal law that requires the identification and analysis of potential environmental impacts resulting from proposed federal actions before those actions are taken. This EA has been prepared in accordance with NEPA (42 United States Code [USC] 4321-4347), the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA* (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR Part 989, et seq., Environmental Impact Analysis Process (formerly known as *Air Force Instruction*[AFI] 32-7061). CEQ regulations mandate that all federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. This process evaluates potential environmental consequences associated with a Proposed Action and considers various alternatives to the Proposed Action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is the EIAP, 32 CFR 989, as amended.

### 1.4.2 Integration of Other Environmental Statutes and Regulations

To demonstrate compliance with NEPA, the planning and decision-making process for actions proposed by the USAF and other federal agencies involves an evaluation of the Proposed Action relative to other relevant environmental statutes and regulations. Application of the NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or Environmental Impact Statement (EIS), which enables the decision-maker to hold a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

The IDEA examines potential impacts of the Proposed Action and alternatives on physical resources, socioeconomics, environmental justice, infrastructure, traffic, safety, noise, air quality, biological

resources, geological resources, cultural resources, land use, and hazardous materials and waste management. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human environment that are prompted for review by Executive Order (EO), regulation, or policy. **Appendix B** contains examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis. Where useful to provide better understanding, key provisions of the statutes and EOs are discussed in more detail in the text of the IDEA.

### 1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning

One of the fundamental principles of NEPA is to provide public and agency awareness of federal actions prior to project implementation. The premise of this principle is that the quality of federal decisions will be enhanced if the general public and local, state, and federal agencies are offered the opportunity to comment and be involved in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning (IICEP)*, requires the USAF to implement an IICEP process, which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, Travis AFB will notify relevant federal, state, and local agencies of the Proposed Action and provide them sufficient time to make known their environmental concerns specific to the action. The IICEP process will also provide Travis AFB the opportunity to cooperate with and consider state and local views in implementing the federal proposal. **Appendix C** includes the IICEP correspondence letters and distribution list.

## 1.5 Organization of this Document

This EA is organized into seven sections. **Section 1** contains background information on Travis AFB, the purpose of and need for the Proposed Action, the location of the Proposed Action, a general description of applicable regulatory requirements, and an introduction to the organization of the EA. **Section 2** provides a detailed description of the Proposed Action, a description of alternatives to the Proposed Action, a description of the No Action Alternative, and a description of the decision to be made and identification of the Proposed Action. **Section 3** contains general descriptions of biophysical resources and baseline conditions that potentially could be affected by implementation of the Proposed Action, alternatives to the Proposed Action, or the No Action Alternative. **Section 4** presents an analysis of the environmental consequences for the range of activities (demolition, construction, and infrastructure upgrades) covering future installation development. **Section 5** includes an analysis of potential cumulative, irreversible, and irretrievable impacts associated with implementation of the Proposed Action. **Section 6** is the list of preparers and **Section 7** lists the sources of information used in the preparation of the document.

**Appendix A** presents the complete list of proposed Travis AFB installation development projects. **Appendix B** contains descriptions of applicable laws, regulations, policies, and planning criteria. **Appendix C** includes a copy of the IICEP letter mailed to the agencies for this action, the IICEP distribution list, and responses to the IICEP letters.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## 2.0 Description of the Proposed Action and Alternatives

This section presents information on the Proposed Action related to the implementation of installation development as described in the Travis AFB wing-approved installation development plans. **Section 2.1** describes the Proposed Action at Travis AFB. **Section 2.2** identifies alternatives to the Proposed Action, including the No Action Alternative. **Section 2.3** identifies the decision to be made and the Preferred Alternative.

### 2.1 Proposed Action

The Proposed Action is to implement continuing installation development actions as found in the community of all existing wing-approved development plans for Travis AFB. This action would enable Travis AFB to meet installation development requirements and therefore ensure readiness for future national defense missions. The Proposed Action consists of 25 projects related to installation development. It is intended that the projects contained in this IDEA will be reviewed during a five year rotational basis and this document may be updated or re-submitted to accommodate substantive change. If during the course of these five years, any of the projects listed in **Appendix A** change substantively, the project could be excluded from the IDEA without affecting other projects originally included in the IDEA.

The projects included as the Proposed Action have been organized into three categories (demolition, construction, and infrastructure upgrade). For the purposes of describing the specific types of projects included as the Proposed Action, representative projects from each of the categories are listed in **Sections 2.1.2, 2.1.3, and 2.1.4**. The projects listed provide representative examples of the various types of projects within each category, however, the total suite of projects that make up the Proposed Action are listed in **Appendix A** and are evaluated in **Section 4** of the EA. The total potential impacts associated with implementation of each of the projects in **Appendix A** are evaluated in the EA. Implementation of the Proposed Action would allow Travis AFB to properly plan for their future planning and budgeting cycles and ensure their readiness for future national defense and homeland security requirements.

This IDEA has been prepared using a constraints-based EIAP (**Section 2.1.1**). This approach enables a comprehensive evaluation of environmental concerns located throughout the Base and also those concerns unique to specific areas of Travis AFB. This analysis utilizes the information obtained from extensive recent EIAP evaluations for similar types of projects to determine the direct, indirect, and cumulative impacts of projects that would be completed as part of the installation's development plan.

Each project would be sited in accordance with Travis AFB's future land use categories (see **Figure 2.1-1**) and would result in no impact to sensitive or constrained areas. The exterior and interior design of the new and renovated facilities would follow the design guidelines outlined in the *Air Mobility Command Civil Engineering Squadron Design Guide* and the *Travis AFB Architectural Design Plan*. Adherence to these standards would maintain a consistent and coherent architectural character throughout Travis AFB. Landscaping in the form of berms, plants, shrubs, and trees would be used not only to enhance the professional architectural character and blend the buildings with the surrounding environment but also for AT/FP purposes. AT/FP measures would be incorporated in accordance with the *USAF Installation Force Protection Guide*.

**Figure 2.1-2** shows Travis AFB site constraints. None of the projects identified as part of the Proposed Action in this IDEA would impact floodplains, wetlands, known threatened or endangered species habitat, and/or cultural resources. Each of the projects would be sited approximately as shown in **Figure 2.1-1**. The precise layout and design of these projects is in the early planning stages and therefore, exact surveyed locations and layouts are not finalized. Should locations and final layout of the projects differ substantially from those anticipated (in location, layout, or potential environmental consequences), further environmental analysis would be completed. If it is determined that future projects, conceived outside of this IDEA, impact sensitive resources, separate environmental analysis would be required.

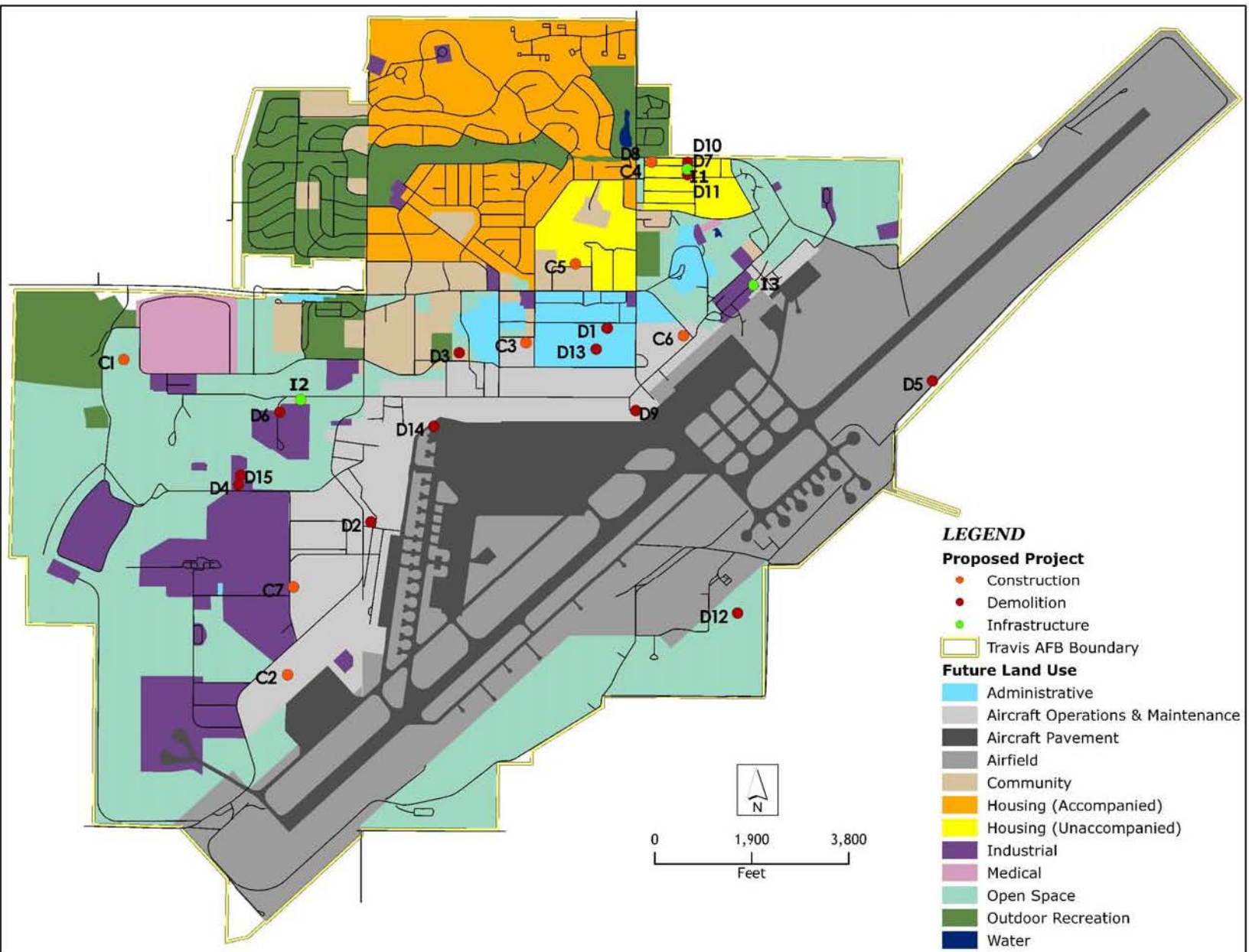


Figure 2.1-1. Proposed Projects and Future Land Use on Travis AFB

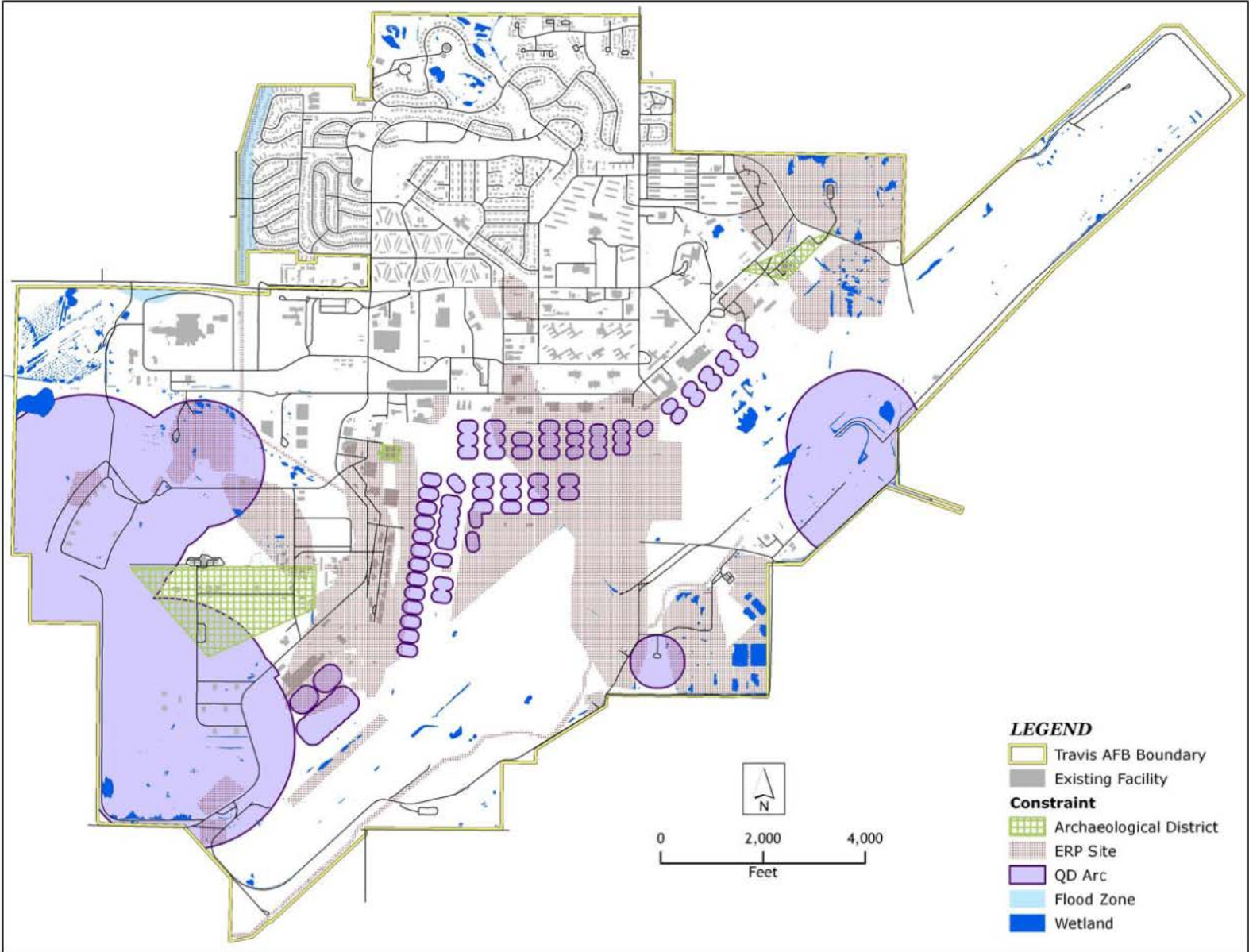


Figure 2.1-2. Travis AFB Constraints

All projects would be designed to comply with current fire and safety codes. To the extent possible, the proposed construction projects would be implemented using sustainable design concepts. Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use, and improved indoor environmental quality. Each project has been sited in a manner consistent with the Travis AFB land use categories (see **Figure 2.1-1**) and would consequently result in minimum impact to the natural or socioeconomic environment of Travis AFB.

### 2.1.1 Major Installation Constraints

There are a number of land use, regulatory, and mission-related constraints within the boundaries of Travis AFB that influence and limit future development at the installation. The projects associated with the Proposed Action are shown in relationship to the major constraints on Travis AFB in **Figure 2.1-3**. Some constraint areas overlap and therefore the acreages listed below do not add up to the actual total acreage of Travis AFB.

**Airfield Infrastructure, Flight Line, Clear Zones, and Imaginary Surfaces.** These areas would only allow airfield improvements and projects directly associated with airfield operations. All projects within this area must be approved by the facilities utilization board (FUB) and airfield management prior to commencing any construction-related activities.

**Wetlands (94 acres).** It is USAF policy not to construct new facilities within the areas containing wetlands, where practicable. To construct within areas containing wetlands, appropriate permits from state and federal regulatory agencies must be obtained. In addition, in accordance with EO 11990, a Finding of No Practicable Alternative (FONPA) must be prepared and approved by Headquarters Air Mobility Command (HQ AMC).

**Threatened and Endangered Species and Associated Habitats.** Travis AFB supports numerous wetlands and vernal pools, which are considered a special-status natural community by the California Natural Diversity Database (CNDDDB) (California Department of Fish and Game 1999). Forty special-status plants and wildlife species, listed either by the state or federal agencies, or the California Native Plant Society (CNPS) for Solano County, occur or could potentially occur on Travis AFB. The vernal pools, riparian habitat, and grasslands on the Base support or provide a potential habitat for these species. Included in the 40 special-status species are:

Name	Status
<i>Lasthenia conjungens</i>	Federally listed as endangered Contra Costa Goldfields
<i>Gratiola heterosepala</i>	State-listed as endangered Boggs Lake Hedge-hyssop
<i>Tuctoria mucronata</i>	Federally and state-listed as endangered Crampton's Tuctoria
<i>Trifolium amoenum</i>	Federally listed as endangered Showy Indian Clover
<i>Neostapfia colusana</i>	Federally listed as threatened Colusa grass
<i>Rana aurora dratonii</i>	Federally listed as threatened California red-legged frog
<i>Thamnophis gigas</i>	Federally and state listed as threatened Giant Garter Snake
<i>Elaphrus viridis</i>	Federally listed as threatened Delta Green Ground Beetle
<i>Branchinecta conservation</i>	Federally listed as endangered Conservancy Fairy Shrimp
<i>Branchinecta lynchi</i>	Federally listed as threatened vernal pool fairy shrimp
<i>Lepidurus packardii</i>	Federally listed as endangered vernal pool tadpole shrimp
<i>Desmocerus californicus</i>	Federally listed as threatened valley elderberry longhorn beetle
<i>Ambystoma tigrinum</i>	The Tiger Salamander has been federally listed as threatened statewide and there is some evidence that this species could be present on the Base

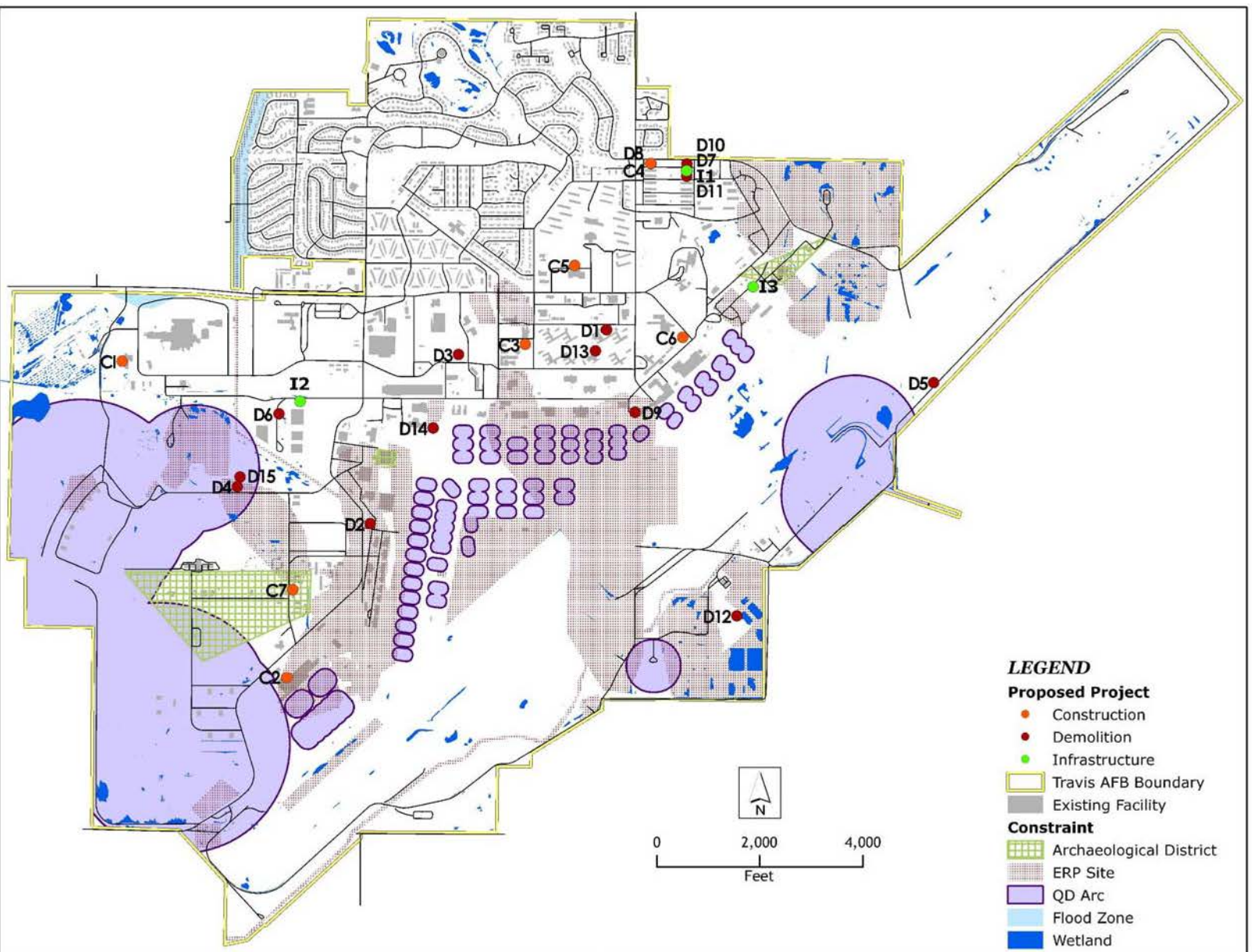


Figure 2.1-3. Proposed Projects and Constraints on Travis AFB

**Cultural Resources, Historic Buildings, and Archaeological Sites (100 acres).** Twenty-seven buildings and structures associated with the Cold War are potentially eligible for inclusion on the National Register of Historic Properties (NRHP). Previous surveys have identified 10 archaeological sites on Base property. Construction within or demolition of cultural resource sites must be coordinated with the State Historic Preservation Office (SHPO), FUB, and the 60<sup>th</sup> Civil Engineering Squadron Environmental Flight (60 CES/CEV).

**Environmental Restoration Program (ERP) Sites (973 acres).** Travis AFB contains 42 active ERP sites. Remedial activity, including groundwater and/or soil cleanup, is occurring at many of these sites. Through the use of an ERP waiver, new facilities may be constructed within certain ERP sites depending upon the level of contamination, clean-up efforts, and land use controls that are applied. Approval of new construction within ERP sites must be obtained by FUB, coordinated with 60 CES/CEV, and approved by AMC (if applicable).

**Quantity Distance (QD) arcs.** There are several areas that are constrained by QD arcs, or clear zones, at Travis AFB. A QD arc is a circular area that is used as a safety buffer for weapons or explosives. The clear zone associated with the munitions storage and loading area near Ragsdale Street in the southwest region of the Base creates the largest area of the Base constrained by a QD arc with a 2,530-foot clear zone. The safety zone associated with the munitions storage and loading area in the western part of the Base that is traversed by Ellis Drive is constrained by a QD arc with a 3,410-foot clear zone. The munitions loading area near the airfield by Perimeter Road has a 1,850-foot QD clear zone. The Explosive Ordnance Disposal (EOD) facility near Carson Drive that is in the southeast portion of the Base has a QD clear zone of 515 feet.

**100-Year Floodplain (32 acres).** It is USAF policy to avoid constructing new facilities within the 100-year floodplain in order to protect the functions of floodplains, minimize the potential damage to facilities, and to ensure the safety of working personnel. Any construction in the floodplain would require a Zero-Rise Floodway study and an associated FONPA as approved by AMC.

Travis AFB consists of 6,258 acres. As a general practice, Travis AFB seeks to avoid, where possible, disturbance activities in floodplains; wetlands; areas where sensitive species nest, roost, or raise young; and areas designated as culturally sensitive. However, as future mission activities dictate, and due to the expanse of constrained areas on Travis AFB, avoiding or restricting future development within this acreage might not be practical and would limit the installation's ability to successfully accomplish its missions. When these resources cannot be avoided, separate and additional NEPA documentation would occur and coordination with the appropriate regulatory agencies would be completed prior to initiating the action. All construction and other activities that would occur in these areas would comply with the requirements of the various local, state, and federal policies and regulations that govern such resources as well as Travis AFB Resource Plans and other best management practices (BMPs).

### 2.1.2 Demolition Projects

As part of the Proposed Action, Travis AFB proposes 15 different demolition projects that would occur over the next five years (**Appendix A**). All four of the dormitory demolition projects (D7, D8, D10, and D11) are associated with constructing the 96-room dormitory (Project C4). The demolition of these facilities has been determined necessary to support the future mission requirements at Travis AFB. These facilities have been deemed too costly to repair or renovate to meet the future mission requirements of Travis AFB. Although the administrative facilities were evaluated for re-use, none of them were deemed suitable to accommodate the future mission requirements and were recommended for demolition. The demolition of these 15 facilities would eliminate approximately 447,550 square feet (SF) of impervious surfaces (excluding the sewage drying beds), minimizing the area of undisturbed land required for the proposed new facilities.

**Table 2.1-1** identifies projects that are representative of the type of demolition projects included as part of the Proposed Action. These demolition projects are listed in this section to provide examples of the type of demolition projects that are scheduled to occur over the next five years at Travis AFB. The full list of

demolition projects included as part of the Proposed Action is included in **Appendix A** and is labeled **Table A-1**.

**Table 2.1-1. Representative Demolition Projects<sup>1</sup>**

Project Title	Map ID	Year Proposed	Area Demolished (SF)
Demolish Sewage Treatment Drying Beds	D-12	2007	2,500,000
Demolish Dormitory 1328	D-7	2010	25,120
Demolish Building 828 (SFS Control)	D-2	2009	32,743

Note: 1. These projects are representative examples and not inclusive of the total list of proposed demolition projects included in this EA as part of the Proposed Action.

### 2.1.3 Construction Projects

The construction portion of the Proposed Action includes seven facility construction, renovation, and alteration projects that would occur over the next five years as identified in **Appendix A**. Implementation of these projects is necessary to support the Travis AFB future mission requirements and to comply with AT/FP criteria. The footprint of these facilities would occupy approximately 236,437 SF. To continue enhancing the compatibility of designated land uses at Travis AFB, the proposed new facilities would be constructed in appropriate land use areas across the installation. For example, the proposed War Reserve Materiel (WRM) warehouse expansion would be constructed within the administrative land use area and the Communications Facility would be constructed in the Airfield O&M land use area.

**Table 2.1-2** identifies projects that are representative of the type of construction projects included as part of the Proposed Action. These construction projects are listed in this section to provide examples of the type of construction projects that are scheduled to occur over the next five years at Travis AFB. The full list of construction projects included as part of the Proposed Action is included in **Appendix A** and is labeled **Table A-2**.

**Table 2.1-2. Representative Construction Projects<sup>1</sup>**

Project Title	Map ID	Year Proposed	Area Constructed (SF)
Construct WRM Warehouse Expansion	C-1	2010	45,483
Construct Consolidated KC-10 Training Facility	C-3	2008	24,000
Construct Communications Facility	C-6	2010	72,600

Note: 1. These projects are representative examples and not inclusive of the total list of proposed construction projects included in this EA as part of the Proposed Action.

### 2.1.4 Infrastructure Projects

Travis AFB proposes three facility infrastructure projects that would occur over the next five years to support future mission requirements and to aid with force protection compliance (**Appendix A**). Facility infrastructure projects include paving parking lots and areas, and installing bulk fuel lines to improve the Base infrastructure capacity to meet the demands of the future. **Table 2.1-3** identifies projects that are representative of the type of infrastructure projects included as part of the Proposed Action. These infrastructure projects are listed in this section to provide examples of the type of infrastructure projects that are scheduled to occur over the next five years at Travis AFB. The full list of infrastructure projects included as part of the Proposed Action is included in **Appendix A** and is labeled **Table A-3**.

**Table 2.1-3. Representative Infrastructure Projects<sup>1</sup>**

Project Title	Map ID	Year Proposed	Project Size (SF)
Replace Bulk Fuel Transfer Lines	I-1	2010	62,408
Pave Area North of Bldg 1733	I-3	2010	29,915

Note: 1. These projects are representative examples and not inclusive of the total list of proposed infrastructure projects included in this EA as part of the Proposed Action.

## 2.1.5 Summary of Proposed Activities

As a result of the Proposed Action, there would be approximately 447,550 SF of building footprint demolished, (and an additional 2,500,000 SF [57 acres] of sewage drying ponds eliminated); 236,437 SF of new facility footprint; and 102,623 SF of infrastructure projects implemented. As a result of the proposed demolition, construction, and infrastructure projects, there would be an anticipated *decrease* of 170,898 SF (3.9 acres) of impervious surface. **Table 2.1-4** summarizes the anticipated changes.

**Table 2.1-4. Change in Impervious Surface**

Project Type	Total Square Footage	Change in Impervious Surface <sup>1</sup>
Demolition <sup>2</sup>	447,550 SF <sup>3</sup>	- 447,550 SF
Construction	236,437 SF	236,437 SF
Infrastructure	102,623 SF	40,215 SF <sup>4</sup>
<b>Total</b>		<b>-170,898 SF</b>

Notes: 1. Change in impervious surface is not necessarily equivalent to the total square footage because some new facilities are multiple stories, and some projects (infrastructure, in particular) do not increase impervious surface.

2. Includes demolitions that are associated with construction projects.

3. Excludes 2,500,000 SF associated with demolition of the sewage treatment drying beds.

4. Excludes 62,408 SF associated with bulk fuel transfer line replacement.

## 2.2 Alternatives

During development of the Travis AFB installation development plans and during the project siting phase, alternative locations for the construction and infrastructure projects were evaluated and the best possible solution for project siting was selected based on numerous criteria (such as collocation of like services, availability of site, etc.). Based on this evaluation, the proposed locations for each of the construction and infrastructure projects were determined to be optimal (**Figure 2.1-1**). With regard to alternatives for the demolition projects, each of these were also evaluated for potential re-use options and none were considered suitable for re-use. The Proposed Action and the No-Action alternatives have therefore been carried forward throughout this document.

### 2.2.1 Alternative 1 – Acquire Additional Land Surrounding Travis AFB

Under this alternative, Travis AFB would acquire land outside its present boundaries to construct facilities needed for future mission requirements. It is important to note that this alternative could only be implemented if designated funded military construction projects have been identified at locations off Travis AFB (AFI 32-9001). Travis AFB is bordered to the north by the City of Vacaville and agricultural land largely owned by the County of Solano, to the east by privately held agricultural and undeveloped lands, to the south by private agricultural land, and to the west by the City of Fairfield. Although undeveloped or agricultural land exists near the Base, a large portion of this land lies within areas restricted for development by the Solano County Travis AFB Airport Land Use Compatibility Plan, the current Air Installation Compatible Use Zone (AICUZ), and the Accident Potential Zone (APZ) and would therefore be limited in its suitability for development. Further, the Department of Defense (DoD) discourages installations from acquiring additional land unless mission or consolidation requirements force the USAF to expand the base boundaries. In fact, the DoD is attempting to dispose of underutilized lands at military installations across the U.S. The construction projects in the IDEA have limited space requirements, either because they are additions to existing structures or are not large structures to begin with. Similarly, there are only three relatively small infrastructure projects: replacement of existing fuel transfer lines, parking lot paving, and an asphalt paving area. Therefore, the projects can be easily accommodated with Travis' existing land. For these reasons, this alternative is not considered viable and is therefore eliminated from further analysis in the IDEA.

## **2.2.2 Alternative 2 – Lease Additional Facilities in the Surrounding Community**

This alternative consists of leasing office and warehouse space in the surrounding community to house military personnel and provide space for mission operations. Implementation of this alternative would result in the separation of various functional groups from the Base and create an insufficient span of control for the headquarters and command and control functions. The leased facilities would require additional cost and would be required to meet the DoD force protection and security requirements which would incur additional costs. In addition, the 2005 BRAC proposal recommended consolidation of functions onto established federal facilities to provide better security and force protection. Therefore, this alternative is not considered a viable alternative and is eliminated from further analysis in the IDEA.

## **2.2.3 Alternative 3 – Implementation of a Subset of Construction Projects**

It is feasible that only a subset of the most crucial projects could be implemented based upon availability of funding. This alternative is less desirable than the Proposed Action because it could limit the overall utility of Travis AFB to serve its mission by leaving existing deficiencies unresolved. While this alternative is less desirable than the Proposed Action, it is likely that the individual projects involved under the Proposed Action would be prioritized and implemented as funding becomes available, essentially phasing the implementation of individual projects. It is highly unlikely that all projects under the Proposed Action would be funded during the same fiscal year. This alternative would have, at most, the same set of impacts as the Proposed Action, but spread out over a longer time period. For this reason, this alternative is not carried forward for further analysis.

## **2.2.4 No Action Alternative**

Under the No Action Alternative, the 60 AMW would not implement the projects proposed in the community of wing-approved installation development plans. In general, implementation of the No Action Alternative would require that the 60 AMW continue to operate using existing infrastructure which is substandard and inefficient in some cases. Under the No Action Alternative, these deficiencies would impair the 60 AMW's future ability to successfully conduct their mission.

Future land use, as proposed in the Travis AFB General Plan (USAF nda), would enhance Travis AFB operations by concentrating similar areas of activities and eliminating underutilized areas.

With the No Action Alternative, some unsafe conditions would continue to exist. Unused buildings scheduled for demolition would continue to degrade creating unsafe conditions. Dormitory buildings would remain noncompliant with AT/FP guidelines. The sewage treatment drying beds would consume space that could be used for future development.

In general, implementation of the No Action Alternative would require that the 60 AMW continue to operate under inefficient, and in some cases, substandard conditions. Given the space constraints on Base, not demolishing the buildings and drying beds would not free up valuable area for improvements.

The No Action alternative has therefore been carried forward for analysis as a baseline against which the impacts of the Proposed Action and alternatives have been evaluated.

## **2.3 Decision to be Made and Identification of the Preferred Alternative**

Upon completion of the EA, Travis AFB would determine whether implementation of the Proposed Action would result in any significant impacts. If it is determined that implementation of the Proposed Action would result in significant impacts, Travis AFB would develop various mitigation measures to reduce impacts to below the level of significance, initiate the preparation of an EIS, or abandon the Proposed Action. This EA will also be used to guide Travis AFB in implementing the Proposed Action in a manner consistent with the USAF standards for environmental stewardship. The Preferred Alternative for the Proposed Action is set forth in **Section 2.1**.

## 3.0 Affected Environment

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, as amended, **Section 3** describes the environmental resources and conditions most likely to be affected by implementation of the Proposed Action. This section provides information to serve as a baseline for identifying and evaluating environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and the No Action Alternative on the baseline conditions are described in **Section 4**.

### 3.1 Noise

#### 3.1.1 Definition of Resource

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific human activities and land uses, e.g., construction sites or industrial plants. Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports), or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the ear drum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. The unit used to measure the intensity of sound is the decibel (dB). Sound intensity varies widely (from a soft whisper to a jet engine) and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). Obviously, as more zeros are added before or after the decimal point, converting these numbers to their logarithms greatly simplifies calculations that use these numbers.

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low frequency sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches. Sound measurement is further refined through the use of “A-weighting.” The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, all sounds throughout this range are not heard equally well. Therefore, through internal electronic circuitry, some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The human ear is most sensitive to frequencies in this range, and sounds measured with these instruments are termed “A-weighted”, and are shown in terms of A-weighted decibels (dBA).

The duration of a noise event and the number of times noise events occur are also important considerations in assessing noise impacts.

As a basis for comparison when noise levels are considered, it is useful to note that at distances of about three feet, noise from normal human speech ranges from 63 to 65 dB, operating kitchen appliances range from about 83 to 88 dB, and rock bands approach 110 dB.

The word “metric” is used to describe a standard of measurement. As used in environmental noise analysis, there are many different types of noise metrics. Each metric has a different physical meaning or

interpretation and each metric was developed by researchers attempting to represent the effects of environmental noise.

The metrics supporting the assessment of noise from construction activities on Travis AFB associated with the proposal assessed in this document are the maximum sound level ( $L_{\max}$ ), the Sound Exposure Level (SEL), and Time-Averaged Sound Levels. Each metric represents a “tier” for quantifying the noise environment, and is briefly discussed below.

### ***Maximum Sound Level***

The  $L_{\max}$  metric defines peak noise levels.  $L_{\max}$  is the highest sound level measured during noise events (e.g., a bulldozer operating), and is the sound actually heard by a person.  $L_{\max}$  is important in judging a noise event’s interference with conversation, sleep, or other common activities.

### ***Sound Exposure Level***

$L_{\max}$  alone may not represent how intrusive a noise event is because it does not consider the length of time that the noise persists. The SEL metric combines intensity and duration into a single measure. It is important to note, however, that SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the total exposure of the entire event. Its value represents all of the acoustic energy associated with the event, as though it was present for one second. Therefore, for sound events that last longer than one second, the SEL value will be higher than the  $L_{\max}$  value. The SEL value is important because it is the value used to calculate other time-averaged noise metrics.

### ***Time-Averaged Cumulative Noise Metrics***

The number of times that noise events occur during given periods is also an important consideration in assessing noise impacts. “Cumulative” noise metrics support the analysis of multiple, time-varying noise events. The most common are the equivalent sound level ( $L_{eq}$ ) and, in the State of California, the Community Noise Equivalent Level (CNEL).

The  $L_{eq}$  metric reflects average continuous sound. It considers variations in sound magnitude over periods of time, and reflects, in a single value, the acoustic energy present during the total time period. Common time periods for averaging are 8- and 24-hour periods [ $L_{eq(8)}$  and  $L_{eq(24)}$ ].

The CNEL metric sums all individual noise events and averages the resulting level over a specified length of time. Normally, this is a 24-hour period. Thus, like  $L_{eq}$ , it is a composite metric representing the maximum noise levels, the duration of the events, and the number of events that occur. However, this metric also considers the time of day during which they occur. This metric adds 5 dB to those events that occur during the evening (between 7:00 p.m. and 9:59 p.m.) and 10 dB to those events that occur at night (between 10:00 p.m. and 6:59 a.m.). These “penalties” account for the increased intrusiveness of noise events that occur during hours when ambient noise levels are normally lower. It should be noted that if no noise events occur between 7:00 p.m. and 6:59 a.m., the value calculated for CNEL would be identical to that calculated for an  $L_{eq(24)}$ . This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

In this document, sound levels associated with activities on Travis AFB are shown as  $L_{eq(8)}$  and  $L_{eq(24)}$ , or CNEL as applicable. Average Sound Level metrics are the preferred noise metrics of the Department of Housing and Urban Development (HUD), the U.S. Department of Transportation (DOT), the Federal Aviation Administration (FAA), the United States Environmental Protection Agency (USEPA), and the Veteran’s Administration (VA). Scientific studies and social surveys have found that Average Sound Level metrics are the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, the scientific community and governmental agencies (American National Standards Institute [ANSI] 1980, 1988; USEPA 1974; Federal Interagency Committee on Urban Noise [FICUN] 1980; Federal Interagency Committee on Noise [FICON] 1992) endorse their use.

The State of California has not adopted any quantitative noise regulations that are applicable to the Proposed Action, although the California Department of Health Services, Environmental Health Division has established guidelines regarding land use compatibility.

Noise regulations established by local jurisdictions that govern stationary noise sources are typically included in noise ordinances, although policies that limit public exposure to noise may be included in the general or community plans of individual cities or counties. Some jurisdictions also have specific provisions addressing construction noise impacts that often limit the hours and days of construction and may establish noise thresholds that may not be exceeded at specific locations, such as the property line of the site that is under construction.

The City of Fairfield, California, has adopted a noise ordinance in its City Code. Guidance applicable to this assessment is the prohibition of construction activities between the hours of 10:00 p.m. and 7:00 a.m., and limiting noise exposure at schools to a maximum  $L_{eq(24)}$  of 55 dB (City of Fairfield 1960).

Finally, it should be noted that ambient background noise is not considered in the noise calculations that are presented below. There are two reasons for this. First, ambient background noise, even in wilderness areas, varies widely, depending on location and other conditions. For example, studies conducted in an open pine forest in the Sierra National Forest in California have measured up to a 10 dBA variance in sound levels simply due to an increase in wind velocity (Harrison 1973). Therefore, assigning a value to background noise would be arbitrary. Secondly, and probably most important, is that it is reasonable to assume that ambient background noise in the project's region of influence (ROI) would have little or no effect on the calculated Day-Night Average Sound Levels. In calculating noise levels, louder sounds dominate the calculations, and overall, aircraft and other transportation-related noise would be expected to be the dominant noise sources characterizing the acoustic conditions in the region.

The ROI for the noise assessments is the area on and around Travis AFB that is exposed to elevated noise levels caused by aviation-related noise and other human activities in the region.

### 3.1.2 Existing Conditions

Public annoyance is the most common concern associated with exposure to elevated noise levels. When subjected to average noise levels of 65 dBA, approximately 12 percent of the persons so exposed will be "highly annoyed" by the noise. At levels below 55 dBA, the percentage of annoyance is substantially lower (less than 3 percent), and at levels above 70 dBA, it is substantially higher (greater than 25 percent) (Finegold et al. 1994). **Table 3.1-1** shows the percentage of the population expected to be highly annoyed at a range of noise levels.

**Table 3.1-1. Percentage of Population Highly Annoyed By Elevated Noise Levels**

Noise Exposure ( $L_{dn}$ in dBA)	Percent Highly Annoyed
< 65	< 12
65 – 70	12 – 21
70 – 75	22 – 36
75 – 80	37 – 53
80 – 85	54 – 70
> 85	> 71

Source: Finegold et al. 1994

#### ***Aircraft Noise***

Aircraft operations are the dominant noise source on Travis AFB. All of the sites associated with this proposal are exposed to noise levels greater than 60 dBA, with the vast majority exposed to levels of 65 dBA or greater (USAF 2003a).

### ***Other Ground-Based Activity***

Some additional noise results from day-to-day activities associated with operations, maintenance, and the industrial functions associated with the operation of the installation, and other commercial activities around it. These noise sources include the operation of ground-support equipment, and other transportation noise from vehicular traffic. However, this noise is generally localized in industrial areas on or near the airfield, or on established lines of communication supporting traffic to-and-from the airfield. Noise resulting from aircraft operations remains the dominant noise source in the airfield region.

## **3.2 Land Use**

### **3.2.1 Definition of Resource**

Land use classifications reflect either natural or human activities occurring at a given location. Land uses resulting from human activities include residential, commercial, industrial, airfield, recreational, agricultural, and other types of developed areas. Natural uses include resource production such as forestry, mining, or agriculture, and resource protection such as conservation areas, wildlands, and parks. Management plans, policies, and regulations dictate the type and extent of land use allowable in specific areas and protection specially designated for environmentally sensitive areas. The ROI for land use for the Proposed Action includes the lands of Travis AFB and the adjacent properties in Solano County.

### **3.2.2 Existing Conditions**

Travis AFB occupies 6,258 acres, on the edge between suburban development and productive agricultural land in northern California. The Base is located about 40 miles southwest of Sacramento and 50 miles northeast of San Francisco. Locally, the Base is 4 miles east of Interstate 80 (I-80) via Air Base Parkway, and 6 miles south of I-80 via Peabody Road from Vacaville (**Figure 1.1-1**). Land use on the Base is guided by the 2002 Base General Plan (USAF nda).

Land uses and activities are represented by 12 different functional categories (**Figure 2.1-1**). Facilities and operations are grouped by functional areas and land use categories. The functional land use categories for Travis AFB include administration, aircraft operations and maintenance, airfield, aircraft pavement, community service, housing accompanied, housing unaccompanied, industrial, medical, open space, outdoor recreation, and water. The airfield (oriented in a northeast to southwest direction) dominates the arrangement of the Base, with aviation-related and industrial areas adjacent to the airfield on the northwest side. Beyond these areas are residential, community, and administrative areas. Open space surrounds much of the developed portions of the Base on the southeast, north, and east side of the runways.

Travis AFB is located within Solano County, one of nine counties comprising the Association of Bay Area Governments (ABAG), the metropolitan planning organization for the San Francisco Bay area. The installation lies within the corporate boundary of the City of Fairfield, but also has common boundaries with the Suisun City and unincorporated areas of Solano County.

The land surrounding the installation is predominantly rural and agricultural in use, with some developed areas mostly around the northwest edge of Base. The General Plan for the City of Fairfield shows land bordering the installation being used for a variety of uses including conservation, highway and regional commercial, business and industrial, public facilities, and medium-low density residential (4.5 to 8.0 units per acre) (City of Fairfield 2006a). This residential land is in fact part of the installation's family housing area.

The AICUZ program has established land use compatibility guidelines that are similar to those used by the FAA. Much of the land surrounding the airfield is currently unincorporated but within the Urban Limit line and planning Sphere of Influence for the City of Fairfield. Recognizing the economic importance of Travis AFB to the area, the City of Fairfield has developed land use guidelines for land

surrounding the airfield to prevent future incompatible development around the airfield (City of Fairfield 2001).

This is reinforced by the Solano County Airport Land Use Commission's adoption of the Travis AFB Land Use Compatibility Plan in 2002. The plan provides a future land use framework to prevent encroachment and incompatible development, with stricter standards applying to residential and development of schools (EDAW nd). Solano County is in the process of updating their General Plan. County land bordering Travis AFB, largely on its eastern side, is primarily agricultural or open and undeveloped. From a land use perspective, one of the guiding principles of the County's Board of Supervisors for the General Plan is to preserve agricultural and rural areas and open space, and to focus growth in existing communities (Solano County 2007).

To the south and southwest of the airfield, adjacent areas are within the Sphere of Influence of the City of Suisun, but outside the City's planned urban area. Most of the adjacent land is agricultural or vacant. An exception is the Lambrecht Sports complex (with eight ball fields) located on the southwest corner of the installation. The complex is exposed to noise levels of 60 to 70 dBA. The City of Suisun has deferred to the Solano County General Plan for land use designation of the land outside of the area planned for urbanization (EDAW nd).

### 3.3 Air Quality

#### 3.3.1 Definition of the Resource

**Federal Air Quality Standards.** Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards. Under the authority of the Clean Air Act (CAA), the USEPA has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety.

These federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent the maximum allowable atmospheric concentrations and were developed for seven "criteria" pollutants: ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), respirable particulate matter less than or equal to 10 micrometers in diameter (PM<sub>10</sub>), particulate matter less than or equal to 2.5 micrometers in diameter (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [µg/m<sup>3</sup>]) determined over various periods of time (averaging periods). Short-term standards (1-hour, 8-hour, or 24-hour periods) were established for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established for pollutants with chronic health effects and may never be exceeded.

Based on measured ambient criteria pollutant data, the USEPA designates areas of the U.S. as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Under the CAA, the nonattainment classifications for CO and PM<sub>10</sub> were further divided into moderate and serious categories. O<sub>3</sub> nonattainment was divided into marginal, moderate, serious, severe, and extreme categories. Upon achieving attainment, areas are considered to be in maintenance status for a period of ten or more years. Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the USEPA to form a basis of attainment status. For the purpose of applying air quality regulations, unclassifiable areas are treated similar to areas that are in attainment of the NAAQS.

**State Air Quality Standards.** Under the CAA, state and local agencies may establish local air quality standards and regulations of their own, provided that these are at least as stringent as the federal requirements. The California Air Resources Board has established California Ambient Air Quality Standards (CAAQS) for these pollutants, and also for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Both the NAAQS and CAAQS are shown in **Table 3.3-1**. Primary standards,

as depicted in this table, set limits with an adequate margin of safety to protect public health, including the health of sensitive populations, such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare from any known or anticipated adverse effects of pollution, including protection against decreased visibility, damage to animals, vegetation, and buildings.

**Table 3.3-1. National and California Ambient Air Quality Standards**

Air Pollutant	Averaging Time	California AAQS	NATIONAL AAQS	
			Primary	Secondary
<b>Carbon Monoxide (CO)</b>	8-hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	---
	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	---
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	Annual	0.03 ppm (56 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )
	1-hour	0.18 ppm (338 µg/m <sup>3</sup> )	---	---
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	Annual	---	0.03 ppm (80 µg/m <sup>3</sup> )	---
	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm (365 µg/m <sup>3</sup> )	---
	3-hour	---	---	0.50 ppm (1300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (655 µg/m <sup>3</sup> )	---	---
<b>Particulate Matter (PM<sub>10</sub>)</b>	Annual	20 µg/m <sup>3</sup>	---	---
	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
<b>Particulate Matter (PM<sub>2.5</sub>)</b>	Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
	24-hour	---	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
<b>Ozone (O<sub>3</sub>)</b>	1-hour	0.09 ppm	---	---
	8-hour	0.07 ppm	0.08 ppm	0.08 ppm
<b>Lead (Pb) and Lead Compounds</b>	30-days	1.5 µg/m <sup>3</sup>	---	---
	Quarter	---	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>
<b>Sulfates</b>	24-hour	25 µg/m <sup>3</sup>	---	---
<b>Hydrogen Sulfide</b>	1-hour	0.03 ppm	---	---
<b>Vinyl Chloride</b>	24-hour	0.01 ppm	---	---
<b>Visibility Reducing Particles</b>	8-hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when the relative humidity is less than 70 percent.	---	---
			---	---

- Notes:
1. California standards for carbon monoxide, nitrogen dioxide, sulfur dioxide (1-hour and 24-hour), PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.
  2. National standards (other than ozone particulate matter, and those based on annual averages) are not to be exceeded more than once a year. The ozone standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
  3. µg/m<sup>3</sup> = micrograms per cubic meter
  4. mg/m<sup>3</sup> = milligrams per cubic meter
  5. ppm = parts per million

Sources: 40 CFR 50; California Air Resources Board 2007

**State Implementation Plan.** For non-attainment regions, the states are required to develop a State Implementation Plan (SIP) designed to eliminate or reduce the severity and number of NAAQS violations, with an underlying goal to bring state air quality conditions into (and maintain) compliance with the NAAQS by specific deadlines. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS in each state.

**Prevention of Significant Deterioration (PSD).** Section 162 of the CAA further established the goal of PSD of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas and memorial parks which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. Under CAA Section 164, states or tribal nations, in addition to the federal government, have the authority to redesignate certain areas as (non-mandatory) PSD Class I areas, e.g., a national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres. PSD Class I areas are areas where any appreciable deterioration of air quality is considered significant. Class II areas are those where moderate, well-controlled growth could be permitted. Class III areas are those designated by the governor of a state as requiring less protection than Class II areas. No Class III areas have yet been so designated. The PSD requirements affect construction of new major stationary sources in the PSD Class I, II, and III areas and are a pre-construction permitting system.

**Visibility.** CAA Section 169(a) established the additional goal of prevention of further visibility impairment in PSD Class I areas. Visibility impairment is defined as a reduction in the visual range and atmospheric discoloration. Determination of the significance of an activity on visibility in a PSD Class I area is typically associated with evaluation of stationary source contributions. The USEPA is implementing a Regional Haze rule for PSD Class I areas that will address contributions from mobile sources and pollution transported from other states or regions.

Emission levels are used to qualitatively assess potential impairment to visibility in PSD Class I areas. Decreased visibility may potentially result from elevated concentrations of PM<sub>10</sub> and SO<sub>2</sub> in the lower atmosphere.

**General Conformity.** CAA Section 176(c), General Conformity, established certain statutory requirements for federal agencies with proposed federal activities to demonstrate conformity of the proposed activities with each state's SIP for attainment of the NAAQS. Federal activities must not:

- (a) cause or contribute to any new violation;
- (b) increase the frequency or severity of any existing violation; or
- (c) delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment of NAAQS.

General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual thresholds identified in the rule, a conformity determination is required of that action. The thresholds become more restrictive as the severity of the nonattainment status of the region increases.

**Stationary Source Operating Permits.** Operating permits for stationary sources are issued by the Bay Area Air Quality Management District (BAAQMD). Travis AFB holds operational permits for stationary emission sources, such as generators, internal combustion engines, abrasive cleaning, jet engine testing, fuel dispensing, welding, and surface coating. Mobile emission sources such as aircraft and on-road vehicles are not regulated by the BAAQMD.

### 3.3.2 Existing Conditions

**Attainment Status.** Travis AFB is in the central portion of Solano County that is within the San Francisco Bay Area Air Basin and administered by the BAAQMD. This air basin also consists of all or portions of Alameda, Contra Costa, Main, Napa, San Francisco, San Mateo, Santa Clara, and Sonoma counties. The portion of the county which includes Travis AFB is designated as a marginal ozone nonattainment area. Travis AFB is a maintenance area for carbon monoxide. In addition, the area is in attainment for the federal PM<sub>10</sub> and PM<sub>2.5</sub> standards, but nonattainment for the state PM<sub>10</sub> and PM<sub>2.5</sub> standards. The area is in attainment or not classified for all other NAAQS and CAAQS.

The primary source of O<sub>3</sub> precursors (nitrogen oxides or NO<sub>x</sub>, and volatile organic compounds or VOCs) in the San Francisco Bay Area Air Basin is from on-road motor vehicles and other mobile sources (e.g., aircraft, recreational boats, and off-road equipment). The primary sources of PM<sub>10</sub> emissions include construction and demolition, dust from paved and unpaved roads, and fugitive windblown dust (California Air Resources Board 2006).

**PSD Class I Areas.** The nearest PSD Class I area is the Point Reyes National Seashore, approximately 46 miles to the west.

**Regional Air Emissions.** In addition to estimating the increase in emissions from the Proposed Action and alternatives, the NEPA process must also determine if these emission increases exceed the conformity *de minimis* thresholds or if the federal action is considered a “regionally significant action” (equal to or greater than 10 percent of the regional emissions). If neither of these cases is true, then the federal action is exempt from further conformity analysis. *De minimis* thresholds are specified in the conformity rule for criteria pollutants based on the degree of nonattainment of the area. The applicable *de minimis* thresholds for Travis AFB are 100 tons/year for the O<sub>3</sub> precursors VOCs and NO<sub>x</sub>. **Table 3.3-2** shows the 2002 estimated annual emissions of these emissions in the San Francisco Air Basin.

**Table 3.3-2. Air Emissions Inventory for the San Francisco Bay Area Air Basin  
Calendar Year 2002 (tons per year)**

POLLUTANTS (TONS/YR)				
CO	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>
901,630	166,650	226,950	23,370	71,630

Source: USAF 2006a

## 3.4 Safety

### 3.4.1 Definition of the Resource

This section addresses ground, explosive, and flight safety associated with activities conducted by the 60 AMW, Travis AFB, California. Ground safety addresses issues associated with human activities, and O&M activities that support unit operations. A specific aspect of ground safety addresses AT/FP. Explosive safety addresses the management and use of ordnance or munitions associated with installation operations and training activities. Flight safety addresses aircraft flight risks such as aircraft accidents and Bird-Aircraft Strike Hazards (BASH).

The ROI for safety is Travis AFB, and the land areas and airspace surrounding the airfield.

### 3.4.2 Existing Conditions

#### ***Ground Safety***

Day-to-day operations and maintenance activities conducted by the 60 AMW are performed in accordance with applicable USAF safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health (AFOSH) requirements.

#### ***Anti-Terrorism /Force Protection***

As a result of terrorist activities, the DoD and USAF have developed a series of AT/FP guidelines for military installations. These guidelines address a range of considerations that include access to the installation, access to facilities on the installation, facility siting, exterior design, interior infrastructure design, and landscaping (Unified Facilities Criteria [UFC] 4 010 01 2003; USAF ndb). The intent of this siting and design guidance is to improve security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack.

Many military installations, such as Travis AFB, were developed before such considerations became a critical concern. Thus, under current conditions, many units are not able to comply with all present AT/FP standards. However, as new construction occurs, it would incorporate these standards, and as facilities are modified, AT/FP standards would be incorporated to the maximum extent practicable.

#### ***Explosives Safety***

Ordnance is handled and stored in accordance with USAF explosive safety directives (AFI 91-201), and all munitions maintenance is carried out by trained, qualified personnel using USAF-approved technical procedures. There are no encroachments on safety areas around storage facilities.

EOD technicians are stationed on Travis AFB that support 60 AMW requirements, as necessary.

#### ***Flight Safety***

The primary public concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of mid-air collisions, collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird-aircraft collisions. Flight risks apply to all aircraft; they are not limited to the military. Flight safety considerations addressed include aircraft mishaps and bird-aircraft strikes.

#### ***Aircraft Mishaps***

The USAF defines four major categories of aircraft mishaps: Classes A, B, C, and E, which includes High Accident Potential (HAP). Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$1 million, or destruction of an aircraft. Class B mishaps result in total costs of more than \$200,000, but less than \$1 million, and/or results in permanent partial disability or inpatient hospitalization of three or more personnel. Class C mishaps involve reportable damage of more than \$20,000, but less than \$200,000; an injury resulting in any loss of time from work beyond the day or shift on which it occurred, or occupational illness that causes loss of time from work at any time; or an occupational injury or illness resulting in permanent change of job. HAP events are any hazardous occurrence that has a high potential for becoming a mishap. Class C mishaps and HAP, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public (USAF 2004a).

There are no specific aeronautical hazards associated with aircraft operations at Travis AFB.

#### ***Bird-Aircraft Strike Hazards***

Bird-aircraft strikes constitute a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur in a populated area. Aircraft may encounter birds at altitudes of 30,000 feet above mean sea level (MSL) or higher. However, most birds fly close to the ground. Over 94 percent of reported bird strikes occur below 3,000 feet above ground level (AGL).

Approximately 50 percent of bird strikes happen in the airport environment, and almost 15 percent occur during low-altitude flight training and use of weapons ranges (USAF BASH Team 2005).

Migratory waterfowl (e.g., ducks, geese, and swans) are the most hazardous birds to low-flying aircraft because of their size and their propensity for migrating in large flocks at a variety of elevations and times of day. Waterfowl vary considerably in size, from one to two pounds for ducks, five to eight pounds for geese, and up to 20 pounds for most swans. There are two normal migratory seasons, fall and spring. Waterfowl are usually only a hazard during migratory seasons. These birds typically migrate at night and generally fly between 1,500 to 3,000 feet AGL during the fall migration and from 1,000 to 3,000 feet AGL during the spring migration.

Along with waterfowl, raptors, shorebirds, gulls, herons, and songbirds also pose a hazard. In considering severity, the results of bird-aircraft strikes in restricted areas show that strikes involving raptors result in the majority of Class A and Class B mishaps related to bird-aircraft strikes. Raptors of greatest concern are vultures and red-tailed hawks. Peak migration periods for raptors, especially eagles, are from October to mid-December and from mid-January to the beginning of March. In general, flights above 1,500 feet AGL would be above most migrating and wintering raptors.

Songbirds are small birds, usually less than one pound. During nocturnal migration periods, they navigate along major rivers, typically between 500 to 3,000 feet AGL.

The potential for bird-aircraft strikes is greatest in areas used as migration corridors (flyways) or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands).

While any bird-aircraft strike has the potential to be serious, many result in little or no damage to the aircraft, and only a minute portion result in a Class A mishap. During the years 1985 to 2004, the USAF BASH Team documented 62,536 bird strikes. Of these, 25 resulted in Class A mishaps where the aircraft was destroyed. These occurrences constituted approximately 0.04 percent of all reported bird-aircraft strikes (USAF BASH Team 2005).

A bird/wildlife aircraft strike hazard exists at Travis AFB due to its location in the Pacific flyway, and the abundance of attractant habitat in the area. Gulls and other waterfowl create the greatest hazard. Additionally, a large rodent population on the installation and the adjacent agricultural lands attract raptors (60 AMW 2005).

The 60 AMW has an aggressive, on-going BASH program. Airfield habitat management, bird control, removal of other wildlife, bird dispersal activities, and proper communications with the control tower have all occurred in the past and have served to significantly reduce the hazards at the airfield.

## 3.5 Geologic Resources

### 3.5.1 Definition of the Resource

Geologic resources include geology, soils, and topography.

**Geology.** Geologic resources of an area typically consist of surface and subsurface materials and their inherent properties. The region's potential for natural hazards is also addressed within this section.

**Soils.** The term "soils" refers to unconsolidated materials formed from the underlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil drainage, texture, strength, shrink/swell potential, and erodibility all determine the suitability of the ground to support man-made structures and facilities.

**Topography.** Topography incorporates the physiographic or surface features of an area with respect to elevation, slope, aspect, and landforms. Long-term geological, erosional, and depositional processes typically influence topographic relief of an area. These resources may have scientific, historical, economic, and recreational value.

The ROI for geologic resources in this EA includes the Travis AFB installation where construction, demolition, and infrastructure projects would be implemented. The geologic description for the project site is general to the entire Travis AFB installation, while the soils and topographic discussions are site specific.

### 3.5.2 Existing Conditions

**Geology.** Travis AFB lies within the Central Valley, a large, flat valley that dominates the central portion of California and stretches nearly 400 miles (600 kilometers) north to south, its northern half referred to as the Sacramento Valley and its southern half as the San Joaquin Valley. This area is underlain by as much as 8 or 9 miles of sediments derived from adjacent uplands. The valley is thought to have originated below sea level as an offshore area depressed by subduction of the Farallon Plate into a trench further offshore. It was later enclosed by the uplift of the Coast Ranges, with its original outlet into Monterey Bay. Faulting moved the Coast Ranges, and a new outlet developed near what is now San Francisco Bay. Over the millennia, the valley was filled by the sediments of the Coast Ranges, as well as the rising Sierra Nevada to the east, and currently lies at sea level (Natural Resources Conservation Service [NRCS] 2006, 1974).

Travis AFB is located in the southeastern portion of Sacramento Valley and is primarily underlain by Pleistocene-age alluvium consisting of sand, gravel, silt, and clay lenses (a body of ore, rock, or a geological deposit that is thick in the middle and thin at the edges, resembling a convex lens). However, the northern portion of the Base consists of recent origin alluvium with Tertiary outcrops interbedded with volcanic debris of the Tehama Formation, Pleistocene-Pliocene non-marine sediments, and Eocene marine sediments of the Markley Formation (NRCS 2006, 1974; USAF 2003a).

The San Andreas, Hayward, and Calaveras fault zones are all located more than 20 miles from the Base. The San Francisco Bay is considered an area of historic and present day seismic activity due to the presence of these faults. The Green Valley fault is located approximately 10 miles west of the Base and is potentially active. In addition, the Vaca Fault System lies east and northeast of Travis AFB consisting of a number of separate lineaments, however, no present surface activity has been identified (USAF 2003a, California Geological Survey 2007).

**Soils.** The dominant soil orders in Central Valley are Alfisols, Aridisols, Entisols, Mollisols, and Vertisols. The soils in the area predominantly have a thermic soil temperature regime (the mean annual soil temperature is 15 degrees Celsius [°C] or higher but lower than 22°C); an aridic or xeric soil moisture regime (arid or typical of a Mediterranean climate where winters are moist and cool and summers are warm and dry, consecutively); and smectitic or mixed mineralogy. These soils are generally very deep, well drained or moderately well drained, and loamy or clayey (NRCS 2006, 1974). In general, soils directly beneath Travis AFB tend to be dense and impervious to air and water, especially in the lower layers, resulting in very little drainage through the soils (USAF 2006a, 2003b).

A soil complex consists of areas of two or more soils, so intricately mixed or so small in size that they cannot be shown separately on a soil map (NRCS 1974). As shown on **Figure 3.5-1**, there are 16 different soil types and complexes located within Travis AFB:

- **Altamont - San Ysidro - San Benito complex (AIC):** These soils are generally well-drained with slow permeability and are typically found on dissected terraces and underlain by siltstone at a depth of 25 to 40 inches. The surface layer consists of dark grayish-brown clay to a heavily silty brown-silty clay loam, 10 inches deep. The subsoil extends to a depth of 60 inches consisting of primarily hard, light yellowish-brown siltstone. The complex consists of 60-percent Altamont, 20-percent San Ysidro, and 5-percent Diablo clay and Ayar clay. Slopes are typically 2 to 9 percent. Runoff is medium, and erosion is a moderate hazard (NRCS 1974).

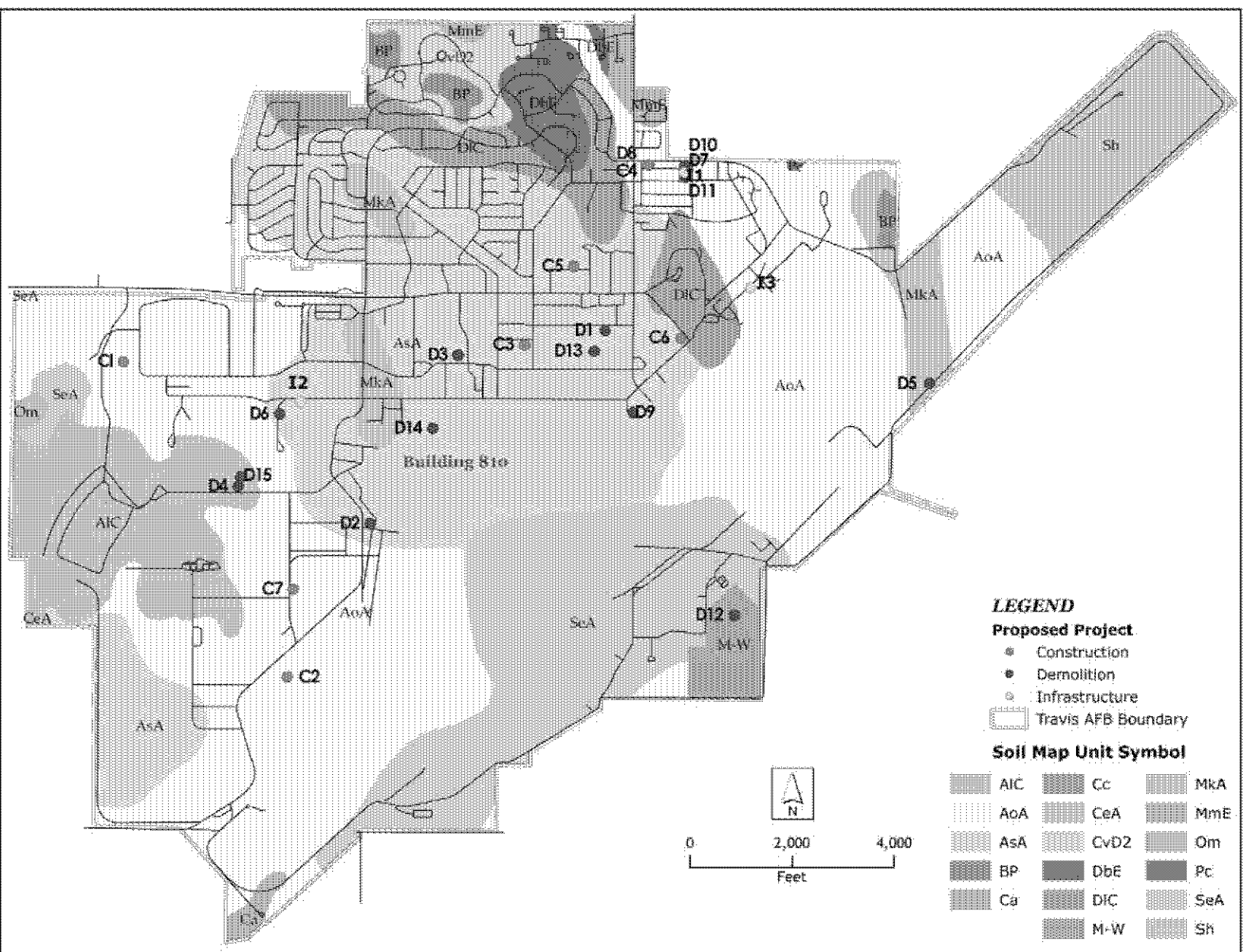


Figure 3.5-1. Soils Mapping Units at Travis AFB, California

- **Antioch - San Ysidro complex (AoA):** This series consists of moderately well-drained soils with slow permeability on terraces formed from alluvium from sedimentary sources. The surface layer is mottled, light brownish-gray loam, 19 inches thick. The subsoil is mottled, light yellowish-brown, yellowish-brown, and pale-brown clay 41 inches thick. The substratum is pale-brown loam extending 60 inches or more. The complex consists of 50-percent Antioch loam and 35-percent San Ysidro sandy loam. The remaining 15 percent includes small areas of Solano loam and Pescadero clay loam. Slopes are typically 0 to 2 percent. Runoff is slow and erosion is a slight hazard (NRCS 1974).
- **Antioch - San Ysidro complex, thick phase (AsA):** These soils have a profile similar to the one described above and are undulating to gently rolling on terraces. This complex is 45 percent Antioch loam and about 45 percent San Ysidro sandy loam. The remaining 10 percent is included in small areas of these soils that have a rooting depth of less than 20 inches. Runoff is medium, and erosion is a slight hazard (NRCS 1974).
- **Borrow Pit (BP):** An excavated area from which earthy material has been removed typically for construction purposes offsite, an anthropogenic feature (discrete, artificial [human-made], earth-surface features) (NRCS 1974).
- **Capay Silty Clay loam (Ca):** The Capay series consists of nearly level to level, moderately well drained soils on basin rims formed in alluvium derived from sedimentary rocks. A texture of a silty clay loam exists throughout the profile, including small areas of Rincon clay loam, Yolo clay loam, and Brentwood clay loam. Surface runoff is very slow and erosion is a slight hazard (NRCS 1974).
- **Capay clay (Cc):** This soil is similar to the profile listed above and is found on nearly level basin rims. Included within it are small areas of Clear Lake clay, Omni silty clay, and Pescadero clay loam. Surface runoff is very slow, and erosion is a slight hazard (NRCS 1974).
- **Clear Lake clay (CeA):** The Clear Lake series consists of poorly drained soils in basins with slow permeability formed in mixed alluvium. The surface layer is dark-gray clay 45 inches thick and the substratum is grayish-brown clay. Included within this series are small areas of Capay clay, Sacramento clay, Omni silty clay, and areas underlain by softly consolidated terrace deposits at a depth of 30 to 60 inches. This soil is typically poorly drained, but drainage can be improved by leveling, using open drains, and general lowering of the water table to a depth of 5 feet. Slopes are typically 0 to 5 percent. Surface runoff is very slow and there is no hazard of erosion (NRCS 1974).
- **Corning gravelly loam (CvD2):** The Corning series consists of well-drained soils on dissected terraces of softy consolidated, mixed, gravelly alluvium with very slow permeability in the subsoil. The surface layer is yellowish-red gravelly loam 17 inches thick and the subsoil is red clay that is 9 inches thick. The substratum is brownish-yellow, dense very gravelly sandy loam that extends to a depth of more than 60 inches. Slopes are typically 2 to 15 percent. Runoff is medium, and erosion is a moderate hazard (NRCS 1974).
- **Dibble-Los Osos loam (DbE):** The Dibble series consists of well-drained soils that are underlain by sandstone at a depth of 20 to 40 inches with slow permeability. The complex is 60 percent Dibble loam and 30 percent Los Osos loam. The remaining 10 percent includes small areas of Millsholm loam. The Dibble soil is on ridge crests and on south-facing slopes, while the Los Osos soil is on north-facing slopes. The surface layer is pale-brown loam 13 inches thick and the subsoil is dark yellowish-brown and light olive-brown heavy clay loam and light clay 17 inches thick. The substratum is light olive-brown sandstone at a depth of 30 inches. Slopes are typically 9 to 30 percent. Runoff is medium, and erosion is a moderate hazard (NRCS 1974).

- **Dibble-Los Osos clay loams (DIC):** This soil profile is similar to the profile listed above. This complex is 60 percent Dibble loam and 30 percent Los Osos loam. The remaining 10 percent includes small areas of Millsholm loam. These soils are 30 to 40 inches deep to the weathered parent material. Slopes are typically 2 to 9 percent. Runoff is medium, and erosion is a slight hazard (NRCS 1974).
- **Millsap sandy loam (MkA):** This series consists of moderately well drained soils on uplands underlain by sandstone at a depth of 20 to 30 inches with slow permeability. The surface layer is light-gray sandy loam 14 inches thick and the subsurface is light-gray loamy sand about 2 inches thick. The subsoil is grayish-brown clay about 12 inches thick underlain by yellowish-brown, very hard sandstone bedrock at a depth of about 28 inches. Slopes are typically 0 to 2 percent. Runoff is slow, and erosion is a slight hazard (NRCS 1974).
- **Millsholm loam (MmE):** The Millsholm series consists of well-drained soils on mountainous uplands underlain by sandstone at a depth of 10 to 20 inches with moderate permeability. The soil is brown to dark yellowish-brown loam about 17 inches thick. The substratum is light yellowish-brown sandstone. Slopes are typically 15 to 30 percent. Runoff is medium, and erosion is a moderate hazard (NRCS 1974).
- **Omni clay loam (Om):** This series consists of poorly drained, calcareous soils nearly level in basins formed in mixed alluvium with slow permeability. The surface layer is a strongly alkaline dark clay loam 10 to 20 inches thick and the subsoil is mottled, calcareous, gray silty clay 25 inches thick. Some parts of this soil are slightly saline. The substratum is stratified, mottled, dark gray to yellowish-brown or olive-gray silty clay that extends to a depth of more than 60 inches. Slopes are nearly level. Runoff is slow, and erosion is a slight hazard (NRCS 1974).
- **Pescadero clay loam (Pc):** This series consists of nearly level, somewhat poorly drained soils that have a saline-alkali subsoil in basins formed in alluvium derived from sedimentary rocks with slow permeability. The surface layer is light brownish-gray clay loam 4 inches thick. Slopes are nearly level. Runoff is very slow, and erosion is a slight hazard (NRCS 1974).
- **San Ysidro sandy loam (SeA):** This series consists of moderately well drained soils on terraces formed in alluvium derived from sedimentary rocks with very slow permeability. The surface layer is light brownish-gray sandy loam and fine sandy loam 14 inches thick and the subsoil is dark yellowish-brown heavy clay loam and yellowish-brown sandy clay loam 26 inches thick. The substratum is yellowish-brown light clay loam that extends to a depth of more than 60 inches. Slopes are typically 0 to 2 percent. Runoff is slow, and erosion is a slight hazard (NRCS 1974).
- **Solano loam (Sh):** This series consists of nearly level, somewhat poorly drained soils on terraces formed in alluvium derived from sedimentary rocks with very slow permeability. The surface layer is mottled, light brownish-gray and light-gray loam about 9 inches thick. The subsoil is brown and light yellowish-brown clay loam and silty clay loam that extends to a depth of more than 60 inches. Slopes are nearly level. Runoff is very slow, and erosion is not a hazard (NRCS 1974).

**Topography.** According to the NRCS (2006), Travis AFB lies within the Pacific Border Province of the Pacific Mountain System in the California Trough Section. Small areas along the western border are in the California Coast Ranges Section. This area includes the valley basins adjacent to the Sacramento and San Joaquin Rivers, fans and floodplains of tributary streams, and terraces and foothills around the edge of the valleys. Elevation ranges from sea level to 660 feet (200 meters) in the foothills surrounding the Central Valley. The valley floor is almost flat, and relief is small even along the borders of the area. The

flatness of the valley floor contrasts with the rugged hills or gentle mountains that are typical of most of California's terrain (NRCS 2006).

Travis AFB is situated partially in the California Trough Section on the east (Central Valley) and partially in the California Coast Ranges Section on the west. The Coast Ranges bound the Trough Section to the west and consist of low ridges of bedrock that extend from the Vaca Mountains to the northwest of the Base to the Montezuma Hills southeast of the Base (NRCS 2006).

The Base is generally flat with elevations ranging from 20 feet above MSL in the southwest portion to 160 feet above MSL in the northern portion. In general, Travis AFB slopes gently to the south (USAF 2006a, 2003b).

## 3.6 Water Resources

### 3.6.1 Definition of the Resource

Water resources analyzed in this EA include groundwater, surface water, and floodplains.

**Groundwater.** Groundwater includes the subsurface hydrologic resources of the physical environment and is an important source of fresh water for the general population commonly used for potable water consumption, agricultural irrigation, and industrial applications. In addition, groundwater plays an important role in the overall hydrologic cycle. Groundwater properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

**Surface Water.** Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including irrigation, power generation, recreation, flood control, and human health.

**Floodplains.** Floodplains are defined by EO 11988, *Floodplain Management*, as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the area subject to a one percent or greater chance of flooding in any given year" (that area inundated by a 100-year flood). Floodplain values include natural moderation of floods, water quality maintenance, groundwater recharge, as well as habitat for many plant and animal species.

### 3.6.2 Existing Conditions

**Groundwater.** The Central Valley of California is underlain by a large basin-fill regional aquifer system that lies between the Sierra Nevada and the Coast Range Mountains, approximately 400 miles long and 20 to 70 miles wide, extending over 20,000 square miles. Although the Central Valley is filled with deep alluvium and other older sediments tens of thousands of feet deep, most of the fresh groundwater is at depths of less than 2,500 feet in beds of sand and gravel. The aquifer system is comprised of, from north to south, the Sacramento Valley, the Sacramento-San Joaquin Delta, and the San Joaquin Valley subregions. Travis AFB lies along the southwestern border of the Sacramento Valley subregion, just north of the Suisun Marsh and west of the Sacramento-San Joaquin Delta (U.S. Geological Survey [USGS] 1995, CALFED 1999, Lund et al. 2007).

Travis AFB is not in the vicinity of major water supply wells and is not underlain by extensive water-bearing materials. However, there are extensive well fields to the west (Fairfield/Green Valley) and northeast (Putah Plain Area). The groundwater present on Base is shallow and typically flows to the south toward Suisun Marsh, then to Suisun Bay, and ultimately the Carquinez Strait, a northern extension of San Francisco Bay. Recharge occurs from the foothills of Cement Hill to the north, as well as infiltration from surface water features such as Union and Denverton Creeks, as well as from direct precipitation (USAF 2003a, 2004b).

**Surface Water.** There are three surface water drainage basins associated with the three Central Valley aquifer subregions: Sacramento Valley, Sacramento-San Joaquin Delta, and the San Joaquin Valley. The

Sacramento River drains the northern portion of Central Valley and the San Joaquin River drains most of the middle third. These two rivers join in the Sacramento-San Joaquin Delta at the Suisun Bay. All of these subregions drain to one surface water outlet, the Carquinez Strait east of San Francisco Bay (Lund et al. 2007, CALFED 1999).

Travis AFB lies within the Union Creek subwatershed within the greater Suisun Bay watershed as defined by the USEPA (2007). Surface water features on Travis AFB include floodplains, wet meadows, vernal pools, man-made waters (e.g., pools, stockponds), and two creeks. Vernal pools and swales are found within grassland habitat on Travis AFB and consist of shallow pools that fill with water during the rainy season and become dry during the summer months. Vernal pools and other wetlands are discussed in further detail under Biological Resources in Section 3.7. The two creeks located within Travis AFB diverge from Union Creek one mile north of Travis AFB and flow south. The western branch of the creek enters Travis AFB along the northwest boundary and is completely channelized within the Base perimeter. The eastern branch enters at the northeast corner of Travis AFB and discharges into North Gate Park Pond or “Duck Pond.” This pond is a 2.2 acre artificial pond created by the impoundment of the eastern branch of Union Creek. Runoff from Duck Pond enters the storm drain system which flows underground until it discharges into Union Creek at the south end of Travis AFB (USAF 2003a, 2004b).

A substantial percentage of land use at Travis AFB consists of surfaces that are impervious to water infiltration, such as asphalt, concrete, or buildings/facilities. According to the 2004 60 AMW *Storm Water Pollution Prevention Plan* (SWPPP) (USAF 2004b), approximately 40 percent of the land area of Travis AFB is considered impervious (2,000 acres). Drainage from these areas is directed by surface topography and perimeter curbing to enclosed storm sewers and open channels, all of which (except the east portion of Runway 21L) ultimately drain into Denverton Slough to the south and east of the Base, which discharges into Union Creek, and ultimately into the Suisun Marsh (USAF 2003a, 2004b).

Storm water discharges at Travis AFB are permitted under the California General Industrial Activities Storm Water Permit (Water Quality Order [WQO] #97-03-DWQ). Regulations for storm water discharges based on the Clean Water Act (CWA) are administered by the State Water Resources Control Board (SWRCB) under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). Runoff is managed in accordance with the 60 AMW SWPPP, which is a requirement of the permit. The SWPPP is an engineering and management strategy prepared specifically for the 60 AMW to improve the quality of the storm water runoff and thereby improve the quality of the receiving waters. The SWPPP also works to minimize storm water runoff through the utilization of appropriate BMPs (e.g., temporary and/or permanent retention/detention ponds, sediment basins, silt fence/straw wattles, temporary diversion dikes and drainage swales) thereby enhancing infiltration and subsequent groundwater recharge. This plan ensures implementation of BMPs and delineates monitoring, training, and documentation requirements of the 60 AMW's National Pollutant Discharge Elimination System (NPDES) storm water permit. The plan includes notification, permit application, and erosion control requirements for any construction activity that will cause a disturbance through clearing, grading, or excavating greater than one acre at the installation (USAF 2004b).

**Floodplains.** Travis AFB is within an area designated by the Federal Emergency Management Agency as ‘Area Not Included.’ Currently, there is no information accurately depicting the floodplain on Travis AFB associated with the two branches of Union Creek. Portions of the 100-year and 500-year floodplain associated with the two branches of Union Creek may be located within the Base boundary along the length of the drainage channel, running south along the western boundary of Travis AFB (**Figure 2.1-2**) (USAF 2003a, 2004b).

## 3.7 Biological Resources

### 3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals, and the habitats such as wetlands, woodlands, and grasslands, in which they exist. Sensitive and protected biological resources include plant and wildlife species that are protected under the Federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or through other federal and state legislation and regulations; as well as wetland and other protected natural communities. Determining which species and communities occur in an area affected by an action may be accomplished through literature reviews, natural heritage database queries, and coordination with appropriate federal and state regulatory agency representatives, resource managers, and other knowledgeable experts.

At Travis AFB, special-status plants are species that are listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12 [listed plants] and various notices in the Federal Register [FR] [proposed species]); candidates for possible future listing as threatened or endangered under the Federal ESA (66 FR 54808, October 30, 2001); listed or candidates for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5); considered by the CNPS to be “rare, threatened or endangered in California” (Lists 1B and 2 in CNPS 2001); or listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4), which may be included as special-status species on the basis of local significance or recent biological information.

Special-status animals are species that are: listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.11 [listed animals] and various notices in the FR [proposed species]); candidates for possible future listing as threatened or endangered under ESA (66 FR 54808, October 30, 2001); listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5); species of special concern (SSC) to California Department of Fish and Game (CDFG) (2003) and the Point Reyes Bird Observatory (California Partners in Flight) 2000 (birds) (mammals); or fully protected under CDFG Code Section 3511(birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians). The U.S. Fish and Wildlife Service (USFWS) implements the ESA, and CDFG implements the CESA.

Biological resources at Travis AFB also include wetlands. Wetlands, including vernal pools, are an important natural system with diverse biological and hydrological functions. These functions include water quality improvement, groundwater recharge and discharge, pollutant uptake, nutrient recycling, unique plant and wildlife habitat provision, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the “waters of the U.S.” under Section 404 of the CWA and incorporate deep-water aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers (USACE) defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”(33 CFR Part 338). Wetlands, streams, reservoirs, sloughs, ponds, and vernal pools typically meet the criteria for federal jurisdiction under Section 404 of the CWA. A policy of no-net loss of wetlands on military installations applies to Travis AFB pursuant to EO 11990 and DoD Instruction 4715.3 (ENC 4, Paragraph B8, respectively). AFI 32-7064 addresses wetland management on USAF installations. Pursuant to NEPA of 1969, as amended (42 USC 4321 et seq.), and long- and short-term adverse impacts should be avoided to the maximum extent practicable. Pursuant to the Section 2(a) of the EO, Travis AFB should avoid undertaking or providing assistance for new construction in wetlands unless there are no practicable alternatives and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

### 3.7.2 Existing Conditions

**Land Use and Management.** Resource conditions and distribution at Travis AFB are affected by biotic and abiotic environmental conditions as well as past and current land use practices. Much of the Base is developed and contains impervious surfaces such as roadways, runways, parking lots, and buildings. Of the remaining area, a sizable portion is manicured, mowed, or disked for landscaping or fire protection. The remaining portion of the Base that consists of natural communities includes grassland uplands, ruderal grasslands, wetlands, wet meadows, vernal pools, riparian corridors, and open waters (USAF 2003a).

The Travis AFB Integrated Natural Resource Management Plan (INRMP) (USAF 2003a) divides Base lands into seven Natural Resources Management Units (NRMUs), five of which contain significant natural resources:

- NRMU A (Aero Club), containing vernal pools and associated special-status species, and burrowing owl habitat.
- NRMU B (Grazing Area), containing vernal pools and upland grasslands.
- NRMU C (Cantonment), containing primarily landscaped vegetation, urban land, and one managed lacustrine habitat (North Gate Park, or “Duck Pond”).
- NRMU D (Castle Terrace Housing), containing vernal pools with documented *Lasthenia conjugens* (Contra Costa goldfields) and *Branchinecta lynchi* (Fairy shrimp).
- NRMU E (Southeast Undeveloped Area), containing Union Creek and associated riparian features, vernal pools and other wetland features, shrub/scrub habitat, and upland grasslands.
- NRMU F (Northeast Undeveloped Area), containing numerous wetland features, including vernal pools, and upland grasslands.
- NRMU G (Flightline), containing urban, mowed grassland, and numerous wetland features near the runway.

Three Preserve Areas were also designated at Travis AFB in accordance with the 1999 USFWS Biological Opinion for the Burke Property. One is 56 acres, comprised of two parcels on the Burke Property at the north end of the Base in NRMU D. Another is the former Aero Club site in NRMU A. Finally, approximately 100 acres in NRMU B were also designated as a vernal pool preserve. These preserve areas contain numerous significant vernal pool wetland features (USAF 2003a).

**Vegetation.** Vegetation in the undeveloped portions of Travis AFB consists of both terrestrial and seasonal wetland types. The relatively flat topography, local soil conditions, Mediterranean climate with hot, dry summers and cool, moist winters, and historic and current land use are the primary abiotic parameters that define local species distribution and community types.

Over 400 seasonal wetlands covering approximately 90 acres have been mapped at Travis AFB, including vernal pools, wet meadows, alkaline seasonal wetlands, emergent seasonal wetlands, and non-native grass seasonal wetlands. Vernal pools are seasonally-flooded wetlands found on ancient soils with an impermeable hardpan that allows the pools to remain wetted for longer duration than surrounding land. These features typically are filled entirely by precipitation, and support a unique and diverse flora and fauna. At Travis AFB, vernal pools are the northern claypan type (Sawyer and Keeler-Wolf 1995), and three listed plant species have been found therein (Contra Costa goldfields [*Lasthenia conjugens*], San Joaquin spearscale [*Atriplex joaquiniana*], and alkali milk vetch [*Astragalus tener* var. *tener*]). Alkaline seasonal wetlands are depressions that fill seasonally, but are relatively sparsely vegetated by salt-tolerant plant species. Emergent seasonal wetlands are low-diversity meadows and drainage ditches subject to prolonged inundation. Non-native grass wetlands are inundated or saturated for part of the winter, and are dominated by non-native grasses different from those found in the upland grassland community. They typically have low species richness, and are often dominated by a moisture-tolerant invasive perennial, Italian ryegrass (*Lolium multiflorum*) (USAF 2006b).

Floodplain riparian communities also occur on Travis AFB, and may overlap with terrestrial and wetland communities. Currently, there is no information accurately depicting the floodplain on Travis AFB associated with the two branches of Union Creek or wetlands within the Travis AFB boundary (USAF 2003a).

Terrestrial vegetation on Travis AFB can be categorized in three community types: annual non-native grassland and forb association, early successional ruderal association, and riparian, described above. The grassland association is found in many areas of the Base that are mowed, disked, or grazed. Weedy ruderal communities are found on lands not actively managed, and include several species of mostly non-native trees and shrubs. Along the banks of Union Creek in the southeastern portion of the Base, small amounts of riparian vegetation are found, including patches of red willow (*Salix laevigata*), arroyo willow (*S. lasiolepis*), and saltgrass (*Distichlis spicata*) (USAF 2006b).

Federally- and state-listed plant species are presented in **Table 3.7-1**.

**Table 3.7-1. Special-Status Species that are Present or Could be Present at Travis AFB**

Scientific Name	Common Name	Status
<b>Wetland Species</b>		
<i>Lasthenia conjungens</i>	Contra Costa Goldfields	Federally-listed as endangered; CNPS 1B
<i>Gratiola heterosepala</i>	Boggs Lake Hedge-hyssop	State-listed as endangered
<i>Tuctoria mucronata</i>	Crampton's Tuctoria	Federally- and state-listed as endangered
<i>Trifolium amoenum</i>	Showy Indian Clover	Federally-listed as endangered; CNPS 1B
<i>Neostapfia colusana</i>	Colusa Grass	Federally-listed as threatened; state-listed as endangered
<i>Rana aurora dratonii</i>	California Red-legged Frog	Federally-listed as threatened; California species of special concern
<i>Thamnophis gigas</i>	Giant Garter Snake	Federally-and state listed as threatened
<i>Elaphrus viridis</i>	Delta Green Ground Beetle	Federally-listed as threatened
<i>Branchinecta conservation</i>	Conservancy Fairy Shrimp	Federally-listed as endangered
<i>Branchinecta lynchi</i>	Vernal Pool Fairy Shrimp	Federally-listed as threatened
<i>Lepidurus packardii</i>	Vernal Pool Tadpole Shrimp	Federally-listed as endangered
<i>Desmocerus californicus</i>	Valley Elderberry Longhorn Beetle	Federally-listed as threatened
<i>Ambystoma tigrinum</i>	California Tiger Salamander	Federally-listed as threatened; California species of special concern
<b>Terrestrial Species</b>		
<i>Athene curriculaeria hypugea</i>	Western Burrowing Owl	USFWS bird of conservation concern; California species of special concern
<i>Lanius ludovicianus</i>	Loggerhead Shrike	California species of special concern
<i>Buteo swainsoni</i>	Swainson's Hawk	USFWS bird of conservation concern; State-listed as threatened

**Wildlife.** This section focuses on terrestrial and aquatic wildlife living in a natural, undomesticated setting, including small and large mammals, birds, reptiles, fish, amphibians, and aquatic invertebrates.

Twenty-nine small and large mammal species have been observed or are known to occur at Travis AFB. Large mammals cannot easily enter or disperse from the Base due to a chain link fence along the entire perimeter of the Base. Deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*) are the most common small mammals. California ground squirrel (*Spermophilus beecheyi*) and black-tailed jackrabbits (*Lepus californicus*) are abundant throughout the Base. The western mastiff bat (*Eumops perotis*), a federal species of concern (SC), may occur on Travis AFB; its habitat is typically rocky areas, with roosts in cliff crevices and buildings (USAF 2003a). No federally or state-listed mammals are known to inhabit Travis AFB.

There are 153 bird species known to occur on the Base, 35 of which are known to nest on Base and 12 that have special-status designations. Red-winged blackbirds (*Agelaius phoeniceus*) are the most common species in the natural areas on the Base. Special-status species that are known to nest on the Base include Loggerhead Shrike (*Lanius ludovicianus*), Western Burrowing Owl (*Athene curriculaeria hypugea*), and Swainson's Hawk (*Buteo swainsoni*). Western Burrowing Owl forages and nests on the ground in grasslands, and is sometimes found in man-made structures such as storm drains and beneath cement and asphalt structures. Loggerhead Shrike forages and nests in grasslands and open meadows. Swainson's Hawk forages in open fields and grasslands, and nests in isolated trees (USAF 2003a, Sibley 2003).

Reptiles and amphibians occur in all vegetation types at Travis AFB. Nineteen species have been observed on the Base. The most frequently observed is the Northwestern fence lizard (*Sceloporus occidentalis*). California red-legged frog (*Rana aurora dratonii*) has been identified in water sources a short distance from the Base. Similarly, California tiger salamander (*Ambystoma californiense*) is known to breed abundantly in wetlands on properties adjacent to Travis AFB, though live specimens have not been observed at the Base. An inventory of potential California tiger salamander breeding habitat was conducted in 2005 (USAF 2006b).

Two species of fish have been stocked in North Gate Park Pond, and seven other species occur in either the pond or Union Creek. No special-status fish species are known to occur on the Base.

Aquatic invertebrates occurring at Travis AFB fall into two categories: benthic macroinvertebrates, which include numerous common and invasive non-native species in addition to natives; and vernal pool invertebrates. Sampling of vernal pool invertebrates revealed 33 taxa. Seven special-status species are either found on Base or have known habitat there, including vernal pool fairy shrimp (*Branchinecta lynchi*). Additional special-status vernal pool species for which suitable habitat is found on the Base or that have been observed on adjacent properties include vernal pool tadpole shrimp (*Lepidurus packardi*), conservancy fairy shrimp (*Linderiella occidentalis*), Ricksecker's hydrochara (*Hydrochara rickseckeri*), midvalley fairy shrimp (*Branchinecta mesoallensis*), Delta green ground beetle (*Elaphrus viridis*), and the San Francisco damselfly (*Ischura gemina*) (USAF 2003a, 2006b).

A list of federally- and state-listed species is found in **Table 3.7-1**.

## 3.8 Cultural Resources

### 3.8.1 Definition of the Resource

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources. Cultural resources that are eligible for listing in the NRHP are called historic properties. Historic properties are evaluated for potential adverse impacts from an action. In addition, some cultural resources such as

American Indian sacred sites or traditional resources may not be historic properties but they are also evaluated under NEPA for potential adverse effects resulting from an action. These resources are identified through consultation with appropriate American Indian or other interested groups. In 1999, the DoD promulgated its American Indian and Alaska Native Policy emphasizing the importance of respecting and consulting with tribal governments on a government-to-government basis. The Policy requires an assessment, through consultation, of the effects of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the armed services.

The ROI for cultural resources is the area at Travis AFB within which the Proposed Action has the potential to affect known existing or as yet unidentified archaeological, architectural, or traditional cultural resources. The ROI is defined as each project's footprint, including any areas that could be used temporarily for staging or other project-related activities.

### 3.8.2 Existing Conditions

**Archaeological Resources.** Several archaeological surveys have been completed at Travis AFB, including a comprehensive cultural resources survey of the Base conducted in 1995 (USAF 2003b). A total of 10 archaeological sites have been identified on Travis AFB during the various surveys. Three of the identified sites were prehistoric and are no longer extant. The remaining seven sites are historic, of which five are located on the main Base property. The other two historic sites are located on geographically separated Base property: one is at Water Well II, and the other is an early 20<sup>th</sup> century road. None of the sites are evaluated as NRHP-eligible, and the SHPO has concurred with those findings (USAF 2003b).

**Traditional, Cultural, or Religious Significance to Native American Tribes.** No traditional resources or Native American issues have been identified at Travis AFB (USAF 2003b). Travis AFB has contacted representatives of the Cortina Band of Indians and the Wintun Environmental Agency to open a dialog regarding contemporary Native American values that may be present within or near the Base and its properties (USAF 2003b).

**Architectural Resources.** A thorough inventory and evaluation of the architectural resources of Travis AFB has been conducted, and 27 Cold War-era facilities are evaluated as potentially eligible for the NRHP (USAF 2003b). These include 23 of the 31 extant buildings and structures from the Armed Forces Special Weapons Project (AFSWP) Q area; three of the seven extant buildings and structures associated with Air Defense Command (ADC) Alert and Readiness area; and Building 810, a double-cantilever B-36 Bomber hangar (**Table 3.8-1**).

The proposed AFSWP Q Area Historic District is a confined, highly intact portion of the larger AFSWP Q Area (**Figure 3.8-1**), and is an example of a rare and distinguishable entity (USAF 2003b). The boundary of the proposed AFSWP Q Area Historic District encompasses 23 contributing buildings and structures, as well as at least six buildings that are not related to the AFSWP and are non-contributing buildings. Because the recommended historic district is potentially eligible for the NRHP under Criterion C as a "distinguishable entity," none of the contributing buildings are potentially eligible on individual merit. Therefore, "the significance of the 23 contributing buildings and structures lies primarily in their spatial and historical relationship to one another" (USAF 2003b).

The proposed ADC Readiness Area Historic District is an excellent example of the programmatic ADC areas built in a standardized configuration throughout the U.S. in the 1950s (**Figure 3.8-1**). It is associated with the high tactical role that ADC Readiness Areas played in USAF air defense during those years (USAF 2003b).

**Table 3.8-1. Cold War Buildings Eligible for the NRHP**

<b>Building No.</b>	<b>Original Use</b>	<b>Year Built</b>
<b>AFSWP Q Area</b>		
902	Base Spares Office	1951-3
903	C Structure: Storage	1951-3
904	Base Spares Warehouse #1: Inert Spares	1951-3
905	Base Spares Warehouse #2: Inert Spares	1951-3
906	Base Spares Warehouse: Inert Spares	1955-6
908	Supply and Issue Shop	1953-4
909	Special Weapons Readiness Crew Building	1956-7
912	Base Communications Office	1956-7
915	Hazardous Substances Warehouse	1956-7
916	Emergency Electrical Power Plant	1951-3
930	Readiness Crew Building/Snack Bar	1951-3
931	Heavy Equipment Shop/Battery Charging Station	1951-3
932	Surveillance and Inspection Shop/Nuclear Weapons Assembly	1951-3
933	Surveillance and Inspection Shop/Nuclear Weapons Assembly	1951-3
934	Surveillance and Inspection Shop/Nuclear Weapons Assembly	1951-3
935	Surveillance and Inspection Shop/Nuclear Weapons Assembly	1951-3
936	Surveillance and Inspection Shop/Nuclear Weapons Assembly	1951-3
937	Power Station	1951-3
938	Base Spares Warehouse	1958-9
940	Paint Shop	1959-60
942	Surveillance and Inspection Shop	1950-3
943	Surveillance and Inspection Shop	1955-6
944	Base Spares Warehouse	1958-9
<b>ADC Alert and Readiness Area</b>		
369	Flight Simulator Training Building	1954-5
1205	Readiness and Maintenance Hangar	1954-6
1212	Unit A: Rocket Check-Out and Assembly Building	1954-5
<b>Building 810</b>		
810	B-36 Bomber Hangar	1952-5

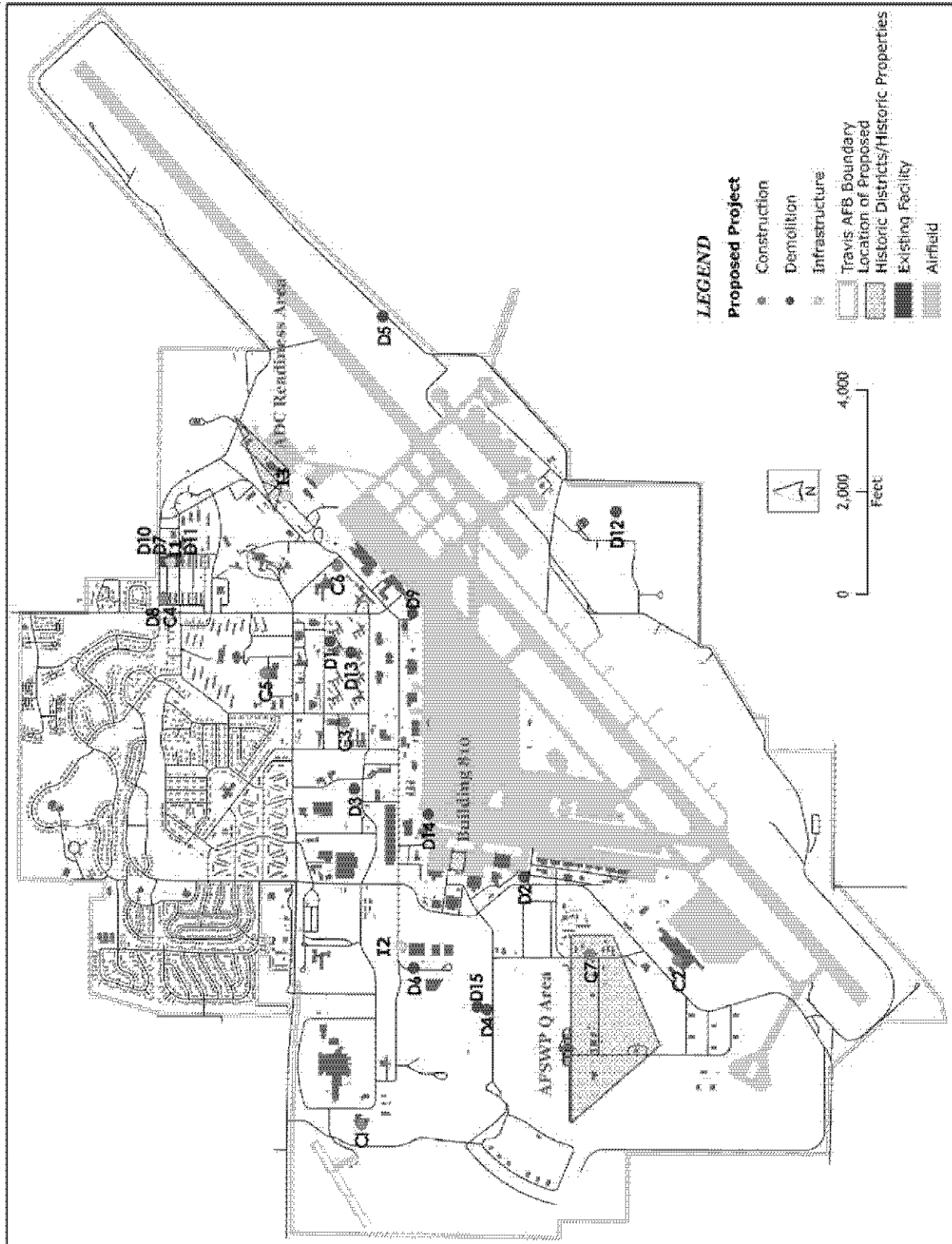


Figure 3.8-1. Location of Proposed Historic Districts and Individually Eligible Cold War-Era Properties

Building 810 is one of the first double-cantilever medium bomber hangars erected by Strategic Air Command (SAC) nationwide and was used at Travis AFB for the B-36—the first U.S. intercontinental bomber (USAF 2003b).

## 3.9 Socioeconomics

### 3.9.1 Definition of the Resource

Socioeconomics are defined as the basic attributes associated with the human environment, particularly population and economic activity. Regional birth and death rates as well as immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these three fundamental socioeconomic indicators can be accompanied by changes in other components, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

Data in these areas provide key insights into socioeconomic conditions that could be affected by an action. Data on employment identifies gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the “before” and “after” effects of any jobs created or lost as a result of an action. Data on industrial or commercial growth or growth in other sectors provides baseline and trend line information about the economic health of a region.

In appropriate cases, data on an installation’s expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and jobs base. Demographic data illustrates the population levels and changes to population of a region. Demographic data can also be used to evaluate a region’s characteristics in terms of race, ethnicity, poverty status, educational attainment level, and other broad indicators.

On February 11, 1994, the President issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO requires that federal agencies’ actions substantially affecting human health or the environment do not exclude persons; deny persons benefits; or subject persons to discrimination because of their race, color, or national origin. The essential purpose of the EO is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of where an action would occur. Such information aids in evaluating whether an action would negatively impact any of the groups targeted for protection in the EO.

Socioeconomic data shown in this section are presented at the U.S. Census Bureau Tract, Metropolitan Statistical Area (MSA), and state levels to characterize baseline socioeconomic conditions in the context of regional, state, and national trends. An MSA is a geographical entity defined for use by federal statistical agencies based on the concept of a core urban area with a high degree of economic and social integration with surrounding communities. Data has been collected from previously published documents issued by federal, state, and local agencies and from state and national databases (e.g., U.S. Bureau of Economic Analysis’ [BEA] Regional Economic Information System).

On April 21, 1997, the President issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children.

The EO further requires federal agencies to ensure that their policies, programs, activities, and standards address these disproportionate risks. The order defines environmental health and safety risks as, “risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink and use for recreation, the soil we live on, and the products we use or are exposed to).” Such information aids in evaluating whether an action would adversely impact children afforded protection by the EO.

### 3.9.2 Existing Conditions

For this EA, the socioeconomic baseline is represented using three levels of comparison: the local ROI, the Bay Area MSA, and the state of California. The ROI is defined as Solano County (within the MSA) as the anticipated capture area for most of the installation’s labor force. Some focus is also given to census tracts directly bordering Travis AFB, which may be directly affected by operations on the Base. These include tracts 2523.09, 2527.02, 2525.06, and 2535. The Bay Area MSA includes a nine-county area and includes the population within the ROI. Finally, the state of California provides the widest relevant region of comparison.

**Social and Economic Conditions.** Table 3.9-1 compares the differences in population in the region between the 1990 Census, the 2000 Census, and the most recent population estimates for 2005. The data show that California grew at a higher rate than the nation during the 1990s, while Solano County grew at a substantially higher rate, even though the nine-county MSA grew slower than the state and nation. Between 2000 and 2005, the growth rate slowed both for the nation and the state of California. This period saw a substantial drop off in growth rate in Solano County and a decline in population in the MSA. This likely reflects high housing costs and growth moratoriums in some communities. The estimated 2005 population for local communities around Travis AFB include the City of Fairfield (102,642), Suisun City (26,118), and Vacaville (81,117) (Bay Area Census [BAC] 2003).

**Table 3.9-1. Population Changes in the Region**

Location	1990	2000	% change 1990-2000	2005	% change 2000-2005
United States	248,709,873	281,421,906	13.2	296,410,404	5.3
California	29,760,021	33,871,648	13.8	35,278,768	4.2
MSA	6,253,311	6,783,760	8.5	6,718,362	-1.0
Solano County	340,421	394,542	15.9	395,426	0.2

Source: U.S. Census Bureau 1990, 2000, and 2005 Population Estimates; BAC 2003 (last updated)

**Table 3.9-2** lists the percentage of jobs in various industries in the ROI, MSA, and California. The top three industries for Solano County are public administration; retail trade; and education, health, and social services. Compared to the MSA and state as a whole, the County has a lower percentage of professional jobs and more retail jobs. The table also shows that Solano County has a higher proportion of jobs in the Armed Forces and construction industry than the MSA and state of California. This is attributable to growth further out from the urban core and also the presence of Travis AFB in the ROI.

**Table 3.9-2. Employment of Residents in the ROI, MSA, and State of California—2005 Estimate**

<b>Economic and Social Indicators</b>	<b>Solano County (%)</b>	<b>MSA (%)</b>	<b>State of California (%)</b>
Employed Persons in Armed Forces	4.2	0.3	1.1
<i>Employed Persons in Civilian Labor Force by Industry</i>			
Agriculture, forestry, fishing, hunting, and mining	2.4	D	3.0
Construction	9.3	5.7	6.0
Manufacturing	5.3	5.5	7.8
Wholesale trade	3.0	3.4	3.8
Retail trade	12.9	9.5	10.3
Transportation, warehousing, and utilities	3.4	D	3.1
Information	1.2	3.2	2.8
Finance, insurance, real estate, rental and leasing	8.1	11.5	9.8
Professional, scientific, management, administrative, and waste management services	10.6	19.4	15.8
Educational, health, and social services	11.6	10.9	10.1
Arts, entertainment, recreation, food services	8.7	9.6	9.1
Other services (except public administration)	5.7	5.7	5.9
Public administration (civilian federal, state and local)	13.9	11.1	11.8

Source: U.S. Census Bureau 2000 (American FactFinder 2005 estimated), BEA 2007

D = Incomplete data to avoid disclosure of confidential information.

Travis AFB is the largest employer in Solano County (City of Fairfield 2006b) with about 11,510 active duty military and reservist personnel and about 3,770 government civilian positions. In addition, there are also about 9,200 military family members residing in the area and over 87,000 military retirees and their family members in a 50-mile area around the installation (Travis AFB nd). The David Grant Medical Center, a 265-bed facility, serves both active and retired military and their families. The total estimated local economic impact of the Base is estimated between \$790 million (Travis AFB nd) to about \$1 billion annually (City of Fairfield 2006b). Other large employers in the area include Anheuser-Busch Companies, Inc.; The Campbell Soup Company; Hines Wholesale Nurseries; Northbay Medical Center; and Solano Community College (USAF 2006a).

The unemployment rate for Solano County has been on the rise over the several years, although consistently lower than the state of California (USAF 2006a). **Table 3.9-3** shows this comparison for the period between 2000 and 2004, based on data from the California Employment Development Department. This is also reflected in a lower percentage of persons living below the poverty level than in the state as whole, as shown in **Table 3.9-4**. Solano County has a lower per capita income than the MSA or the state, but a significantly higher median household income than the state. The overall picture shows a local economy with job opportunities, but mostly in lower paid retail and construction job categories.

**Table 3.9-3. Unemployment Levels for Solano County and State of California – 2000 to 2004 Estimate**

<b>Year</b>	<b>Solano County</b>	<b>State of California</b>
2004	5.9	6.2
2003	6.4	6.8
2002	5.7	6.7
2001	4.5	5.4
2000	4.5	5.0

Source: USAF 2006a

**Table 3.9-4. Income and Poverty Level for Residents in ROI, MSA, and State of California—2005 Estimate**

	<b>Solano County</b>	<b>MSA</b>	<b>State of California</b>
Persons below poverty level (%)	9.3	9.3	13.2
Per Capita Income (\$)	25,830	34,955	26,800
Median Household Income (\$)	62,213	66,657	53,629

Source: BAC 2003

Fewer persons over the age of 25 have high school diplomas in Solano County compared to the MSA and the state of California. Of the 49.7 percent of persons who graduate from high school in Solano County, only 24.8 percent attain a college level degree. This is a lower percentage of college-level graduates than the state (29.5 percent) and the MSA (41.4 percent), as shown in **Table 3.9-5**. Overall, the lower level of educational attainment tracks with an economy that has higher job numbers in construction and retail industries.

**Table 3.9-5. Educational Attainment for Residents in ROI, MSA, and the State of California**

<b>Educational Indicators</b>	<b>Solano County</b>	<b>MSA</b>	<b>State of California</b>
Percent without high school diploma	50.3	40.1	48.7
Percent high school graduate	24.9	18.5	21.8
Percent bachelor's degree or higher	24.8	41.4	29.5

Source: U.S. Census Bureau 2000

**Environmental Justice.** Race, ethnicity, and the poverty status of people within Solano County and particularly the combined population of the four census tracts bordering Travis AFB were examined and compared to the MSA and state averages. **Table 3.9-6** shows that Solano County and the census tracts surrounding the installation have a higher percentage of blacks and African Americans than the MSA and state of California; however, the area has a higher percentage of persons of Asian race. Overall, the percentage of population surrounding the Base and in Solano County that is counted as minority (one race only) is similar to the MSA and the state of California, ranging between about 36 to 37 percent of the total population. The percentage of persons with Hispanic ethnicity (15.2 percent) surrounding the Base is lower than the state of California (32.4 percent), the MSA (19.4 percent), and Solano County (17.6 percent). However, many Hispanic and Latino persons classify themselves racially of white descent, and this group is not counted as a minority population.

**Table 3.9-6** shows that per capita income levels for the areas immediately surrounding the Base are similar to Solano County (\$21,731) and the state (\$22,711), and lower than the MSA (\$30,934). The percentage of persons living below poverty (7.2 percent) is lower than the County and MSA and substantially lower than the state of California (14.2 percent).

**Table 3.9-6. Potential Environmental Justice Indicators—2000 Estimate**

Economic and Social Indicators	ROI		MSA	State of California
	Bordering Census Tracts <sup>1</sup>	Solano County		
Black or African American (%)	12.4	14.9	7.5	6.7
Native American (%)	0.7	0.8	0.6	1.0
Asian (%)	15.2	12.7	19.0	10.9
Native Hawaiian or Other Pacific Islander (%)	0.7	0.8	0.5	0.3
Some other race	7.1	8.0	9.2	16.8
<i>Total Minority (one race)</i>	<i>36.1</i>	<i>37.2</i>	<i>36.8</i>	<i>35.7</i>
Hispanic or Latino (of any race) (%)	15.2	17.6	19.4	32.4
Below Poverty (%)	7.2	8.3	8.6	14.2
Per Capita Income (\$)	18,826-23,114	21,731	30,934	22,711

Note: 1. Includes census tracts 2523.09, 2527.02, 2527.06, and 2535.

Source: BAC 2003 (2005 estimated); U.S. Census 2000

## 3.10 Infrastructure

### 3.10.1 Definition of the Resource

Infrastructure refers to the system of public works, such as utilities and transportation that provide the underlying framework for a community. Utilities include such amenities as water, power supply, and waste management. Transportation and circulation refer to roadway and street systems, the movement of vehicles, pedestrian and bicycle traffic, and mass transit. The infrastructure components to be discussed in this section include the transportation network, electricity, natural gas, sanitary sewer, stormwater drainage, solid waste, and potable water.

The infrastructure information was obtained from the *Travis Air Force Base Development Plan* (USAF 2006c). Various infrastructure assessments were completed between late 2004 and early 2005. All infrastructure systems were rated adequate, degraded, or unsatisfactory. While several systems were rated as degraded or unsatisfactory, the systems continue to operate and meet mission requirements, although at less than desired performance levels.

### 3.10.2 Existing Conditions

**Airfield.** The Travis AFB airfield pavement system has approximately 2,882,542 square yards (596 acres) of airfield pavement which includes 19 concrete taxiways, 2 runways, 2 overruns, 9 ramps, 6 paved shoulders, and 4 cargo pads. The runway system is comprised of a parallel staggered runway pattern in a northeast-southwest orientation. The airfield pavement system was rated as *degraded* due to common stresses such as cracking in concrete pavements, shrinkage, patching, sealant damage, spalling, and vegetation growth in cracks (USAF 2006c).

**Electrical System.** The Pacific Gas & Electric Company (PG&E) supplies electricity to Travis AFB. There are three 60 kilovolt (kV) substations on Base with both overhead and underground lines. In 2004/2005, the electrical system was rated as *unsatisfactory* due in part to the electrical distribution system which is in need of replacement. A privatization initiative is underway to upgrade the system (USAF 2006c).

**Heating and Cooling System.** The oil-fired central heat plant systems on Travis AFB are in *marginal condition*. Plants are currently functional in Buildings 811, 818, and 755, in addition to Buildings 1322 and 1325, which supply heating to the dormitory area. The heating system is maintained in part by

Heating, Ventilation, and Air Conditioning (HVAC) and by civilian contracting. Air conditioning on Base is maintained by civilian contracting. The heating and cooling system was rated as *degraded* in 2004/2005 based on the workload of recurring maintenance and personnel assigned (USAF 2006c).

**Liquid Fuel System.** Liquid fuels at Travis AFB consist of JP-8 (jet fuel), unleaded gasoline, diesel fuel, and deicing fluid. JP-8 is supplied by commercial pipeline four miles west of the Base from Kinder-Morgan via an 8-inch government owned pipeline from Suisun City. All other products are delivered by truck. Diesel fuel is used for some standby heating systems, generators, and for vehicles. The liquid fuels system at Travis AFB was rated as *adequate* in 2004/2005 (USAF 2006c).

**Natural Gas System.** PG&E supplies natural gas to Travis AFB. Natural gas is the primary heating fuel used at Travis AFB. Gas is supplied to the Base by a 6-inch line at the South Gate and a 4- and 12-inch line at the Main Gate. The Base maintains two separate gas distribution systems, which are each metered. The natural gas system was rated as *unsatisfactory* in 2004/2005 and is considered to be in poor condition (USAF 2006c).

**Sanitary Sewer System.** The sanitary sewer system at Travis AFB consists of 41 miles of polyvinyl chloride (PVC), steel, asbestos, concrete, and plastic sewer lines and force mains that range in size from 4 to 21 inches. There are 10 pump stations in the system and sewage flows to the Fairfield-Suisun Sanitary District (FSSD) sewage treatment plant (STP) via a main sewer line located along the south gate. The contract between Travis AFB and the FSSD is based upon an average daily flow of 1.6875 million gallons per day (mgd) (USAF 2006c).

The sanitary sewer system at Travis AFB is about 40 years old and in poor condition. Rated *unsatisfactory* in 2004/2005, specific problems with the existing system include wet weather inflow, approximately 6,800 feet of the sewer system is overloaded during a 5-year storm event, sewer mains and laterals are in poor condition, and insufficient manholes facilitate difficult maintenance performance. A new Infiltration Study is underway (USAF 2006c).

**Stormwater Drainage System.** Storm drainage at Travis AFB consists of a series of enclosed storm sewer, open channels, catch basins, and inlets. The drainage infrastructure consists of six separate storm sewer systems serving six associated subbasins located within the Base perimeter. The storm water runoff is conveyed via open channel and underground pipes to an outfall into one of the two branches of Union Creek (USAF 2004b).

The storm water drainage system at Travis AFB was rated as *unsatisfactory* in 2004/2005 (USAF 2004b). Specific problems with the existing system include clogged culverts, storm capacities of less than a 25-year storm event, uneven flow distribution between the two branches of Union Creek, insufficient inflow/outflow pipes at Duck Pond, and deficient pipe sizes (USAF 2004b).

**Solid Waste Management.** Municipal solid waste (MSW) at Travis AFB is managed in accordance with the guidelines specified in the AFI 32-7042, *Solid and Hazardous Waste Compliance*. This AFI incorporates, by reference, the regulations of Subtitle D, 40 CFR Parts 240 through 244, 257, and 258; and other applicable federal regulations, AFIs, and DoD Directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; recordkeeping and reporting; and pollution prevention. The Travis AFB *Integrated Solid Waste Management Plan* (2004) provides guidance for personnel working with solid wastes and sets local management procedures for managing solid waste, preventing pollution, and establishing proper disposal and recycling options. A contractor, Solano Garbage Company, collects non-recyclable municipal solid wastes for off-Base landfill disposal (USAF 2006c).

Travis AFB has a recycling program that is responsible for the collection, recycling, disposal, tracking, and reporting of all solid waste on Base. Aluminum, glass, and plastic containers can be redeemed for

cash off Base at the California Refund Value Certified Recycling Center. In addition, the Army-Air Force Exchange Service store and Commissary have individual recycling programs (USAF 2006c).

Contractors completing construction and demolition (C&D) projects at Travis AFB are responsible for disposing of waste generated from these activities. Contractors are required to comply with federal, state, local, and USAF regulations for the collection and disposal of MSW from the installation. Much of this material can be recycled or reused, or otherwise diverted from landfills. All nonrecyclable C&D waste is collected in a dumpster until removal. C&D waste contaminated with hazardous waste, asbestos-containing material (ACM), lead-based paint (LBP), or other undesirable components is managed in accordance with AFI 32-7042 (USAF 2006c).

**Transportation System.** The local and regional transportation systems that provide access to the Base are constructed, maintained, and operated by the City of Fairfield, the California Department of Transportation (Caltrans), and AMTRAK. The highways that serve Travis AFB include I-80, State Route 12, Interstate 680, and Interstate 505 (USAF 2004c).

Five arterial roadways provide access to the Base: Air Base Parkway, Peabody Road, Burgan Boulevard (North Gate Road), Scandia Road, and Walters Road (Jepson Parkway). Air Base Parkway is the primary east-west arterial within the Base and connects to I-80 to the east. Peabody Road is a north-south arterial and extends north to the City of Vacaville. Northgate Road is a north-south roadway connecting to the North Gate of the Base and Scandia Road is an east-west roadway connecting to the South Gate of the Base. Walters Road is a north-south arterial that serves Suisun City and the City of Fairfield (USAF 2004c).

The Fairfield/Suisun Transit System (FTS) provides local and regional bus service within the community and to and from the Base. In addition, a Union Pacific mainline passes west of the Base through the City of Fairfield and Suisun City. The Capital Corridor Commuter rail service, under joint agreement between AMTRAK and the State of California, operates between Auburn and San Jose, California (USAF 2004c).

**Potable Water System.** The City of Vallejo provides potable water to Travis AFB from the City of Vallejo Water Treatment Plant (VWTP). The source of water to the VWTP is ultimately supplied from the Sacramento River Delta to the North Bay Aqueduct. The VWTP has a capacity of 6.0 mgd and distribution is made to the Base by a 24-inch, a 16-inch, and a 12-inch water main and four water storage tanks. In addition, the Base has five active wells (2029, 2038, 2037, 2040, and 2041) located at the Cypress Lakes Golf Course, a 200-acre Travis AFB annex approximately four miles north of the Base. The well field is estimated to have a capacity to deliver between 400 and 3,900 gallons per minute (gpm) (USAF 2006c).

The potable water system at Travis AFB is about 50 years old and in poor condition. Rated as *unsatisfactory* in 2004/2005, specific problems with the existing system include leaking tanks; asbestos, cement, steel, and cast iron piping which is deteriorated, corroded, and crumbling; limitations to fire-fighting capabilities; stagnation in some Reservoirs; and pressure problems. A new Master Water Plan study is currently underway (USAF 2006c).

## **3.11 Hazardous Materials and Waste**

### **3.11.1 Definition of the Resource**

This section describes the affected environment associated with hazardous materials and petroleum products, hazardous and petroleum wastes, ERP sites, and solid waste at the construction, renovation, and demolition areas.

The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). In general, hazardous materials include substances that, because of their physical, chemical, or infectious

characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous wastes that are regulated under RCRA are defined as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or are listed as a hazardous waste under 40 CFR Part 261 and 22 CCR 66261.

When hazardous materials or wastes are improperly used in any way, they can threaten the health and well being of wildlife species, habitats, and soil and water systems, as well as humans. This section also considers solid waste.

The management of hazardous materials and hazardous waste is governed by specific environmental statutes. The key regulatory statutes include:

*CERCLA of 1980 (42 USC 9601–9675)* as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. CERCLA/SARA regulates the prevention, control, and compensation of environmental pollution.

*Community Environmental Response Facilitation Act of 1992 (42 USC 9620)*. This act amended CERCLA to require that, prior to termination of federal activities on any real property owned by the federal government, agencies must identify real property where hazardous substances were stored, released, or disposed.

*Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 USC 11001–11050)*. EPCRA requires emergency planning for areas where hazardous materials are manufactured, handled, or stored and provides citizens and local governments with information regarding potential hazards to their community.

*RCRA of 1976 (42 USC 6901–6992)*. RCRA established standards and procedures for handling, storage, treatment, and disposal of hazardous waste.

*Federal Facility Compliance Act of 1992 (Public Law 102-426)*. This act provides for a waiver of sovereign immunity on the part of federal agencies with respect to federal, state, and local requirements relating to RCRA solid and hazardous waste laws and regulations.

*Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1996 (7 USC 136 et seq.)*. FIFRA provides federal control of pesticide distribution, sale, and use. It also provides certification criteria for pesticide applicators, including contractors.

*Pollution Prevention Act of 1990 (42 USC 13101–13109)*. This act encourages minimization of pollutants and waste through changes in production processes.

*USEPA Regulation on Identification and Listing of Hazardous Waste (40 CFR Part 261)*. This regulation identifies solid wastes subject to regulation as hazardous and to notification requirements under RCRA.

*USEPA Regulation on Standards for the Management of Used Oil (40 CFR Part 279)*. This regulation delineates requirements for the storage, processing, transport, and disposal of oil that has been contaminated by physical or chemical impurities during use.

*USEPA Regulation on Designation, Reportable Quantities, and Notification (40 CFR Part 302)*. This regulation identifies reportable quantities of substances listed in CERCLA and sets forth notification requirements for releases of those substances. It also identifies reportable quantities for hazardous substances designated in the CWA.

AFPD 32-70, *Environmental Quality*, establishes the policy that the USAF is committed to environmentally sound practices. These include the following:

- Cleaning up environmental damage resulting from its past activities;
- Meeting all environmental standards applicable to its present operations;

- Planning its future activities to minimize environmental impacts;
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust; and
- Eliminating pollution from its activities wherever possible.

The AFD 32-70 and AFI 32-7000 series incorporate the requirements of all federal regulations, other AFIs, and DoD directives for the management of hazardous materials, hazardous wastes, and special hazards.

The ROI for hazardous materials and hazardous waste encompasses areas that could be exposed to an accidental release of hazardous substances from the construction, renovation, or demolition activities. Therefore, the ROI for this section includes the locations of proposed projects and their immediate surrounding area within the boundaries of Travis AFB.

### 3.11.2 Existing Conditions

The implementation of hazardous material and waste plans at Travis AFB is the responsibility of 60 CES/CEV. In conformance with the policies established by AFD 32-70, 60 CES/CEV has developed procedures and plans to manage hazardous wastes, hazardous materials, special wastes, and environmental restoration sites on Travis AFB.

**Hazardous Materials.** Throughout the USAF, hazardous materials are managed in accordance with AFI 32-7086, *Hazardous Materials Management*. This instruction establishes procedures and standards that govern the management of hazardous materials. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. Hazardous materials are managed in accordance with AFI 32-7086.

Hazardous materials and oil are used throughout the installation for various functions, including aircraft refueling, maintenance, and washing; vehicle maintenance and washing; fuel distribution and management; facilities maintenance and repair; maintenance of ground support equipment; and aircraft support operations. Hazardous materials used in these functions include fuels and lubricating oils, solvents, paints and thinners, antifreeze, and acids. At Travis AFB, hazardous materials, with the exception of fuels, are managed through a centralized Base Hazardous Material Pharmacy using an Environmental Management Information System, which tracks the inventory and acquisition of hazardous materials along with health and safety information (Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis [AFIERA] 2002).

The 60 AMW *Integrated Contingency Plan For Oil And Hazardous Substance Spill Prevention And Response* (USAF 2003c) provides guidance on oil spill prevention measures and contingency procedures including spill containment and cleanup. This plan establishes responsibilities for handling fuels, oil, and other hazardous fluids, containing and recovering spills, spill training, and spill reporting procedures. Per 40 CFR 112, oils and greases include petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil. Applicable materials stored at the installation include JP-8 aviation fuel, gasoline, and diesel fuel, which are stored in underground and aboveground storage tanks and associated distribution systems. In addition, smaller amounts of paints, thinners, lubricants, and other industrial chemicals are stored and handled in various buildings. Bulk JP-8 jet fuel storage is located on the western side of the Base which feeds four fuel hydrant systems located along the aircraft parking ramp.

**Hazardous Waste.** Hazardous wastes are managed in accordance with the Travis AFB *Hazardous Waste Management Plan* (2004). The *Hazardous Waste Management Plan* provides guidance to Travis AFB personnel on the handling, storage, and disposal of hazardous waste and this plan implements the “cradle-to-grave” management control of hazardous waste as mandated by USEPA (USAF 2004d).

Hazardous wastes generated include industrial process wastes such as spent solvents; photofixer; waste oils; cleaning compounds; paint; and universal wastes such as batteries, mercury thermostats, and mercury-containing lamps.

Travis AFB is regulated as a large quantity generator and maintains USEPA identification number CA5570024575. Hazardous wastes are collected at 40 satellite accumulation points and two 90 day storage facilities. Wastes are moved from these accumulation points to a permitted one year storage facility located near the eastern edge of the Base.

**Pollution Prevention.** The Travis AFB *Integrated Solid Waste Management Plan (2004)* provides guidance for personnel who work with solid wastes, and sets local management procedures for managing solid waste, preventing pollution, and establishing proper disposal and recycling options (USAF 2004e). The plan incorporates current USEPA, state, and local requirements regarding the management of solid waste as they relate to environmental protection during operations conducted at the installation. Solid wastes at Travis AFB consist of regular waste from municipal, office, residential, and industrial sources; yard waste, including grass, brush, tree trimmings, and installation grounds and golf course maintenance; high value metal wastes such as brass casings; and roads and grounds maintenance. Travis AFB contracts to have solid wastes that are not recycled hauled to the Potrero Hills Landfill in Suisun City. Recyclables that have California redemption value, including cans and glass, can be taken to an off Base recycling center (USAF 2004e). The goals of Travis AFB for solid waste management include minimizing waste generation by reusing and recycling materials whenever possible, and increasing the use of materials that are reusable and recyclable. As of 2005, the installation recycled about 40 percent of its non-hazardous solid wastes.

**Asbestos.** AFI 32-1052, *Facilities Asbestos Management* provides direction for the management of asbestos and ACM at USAF installations. This instruction requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the condition and status of ACM in buildings and other facilities on the installation, as well as documenting asbestos management efforts. In addition, the instruction requires the development of an asbestos operating plan. This plan describes how the installation maintains compliance with the AFI for asbestos-related projects. However, the plan further notes that USEPA policy is to leave asbestos in place if disturbance or removal could pose a threat to human health or the environment.

Travis AFB maintains compliance with the requirements of AFI 32-1052 through the Travis AFB *Asbestos Management and Operations Plan* (USAF 2004f). This management plan describes procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects. The objective of the plan is to reduce the potential of exposure to potentially hazardous levels of airborne asbestos fibers and assist in maintaining compliance with all federal, state, and local asbestos regulations.

**Lead-Based Paint.** LBP is regulated through the residential Lead-Based Paint Hazard Reduction Act of 1992. Subtitle B, Section 408 regulates the use and disposal of LBP on Federal facilities. Federal agencies are required to comply with applicable federal, state, and local laws and regulations relating to LBP activities and hazards.

USAF policy (USAF 1993) requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. The *Lead-Based Paint Management Plan* (USAF 2004g) provides a basic approach to LBP management. The Plan covers designation of responsibilities, identification of hazards, testing procedures, abatement methods, training requirements, and protection of citizens and workers. The Plan also addresses lead exposure from other sources such as lead soldered fittings used in the potable water system and occupational exposure to lead through corrosion control, welding, and cable maintenance operations. The management and monitoring of LBP, disposal, and other hazards are also discussed.

**Environmental Restoration Program.** The restoration program at Travis AFB is mature as many of the active sites are being managed by use controls or undergoing long-term remediation activities. A systematic approach has been a key factor in site management. This program includes 42 sites distributed across the Base with expenditures in Fiscal Year 2004 totaling approximately \$2.4 million. Through limited funding, the program has been able to continue to meet milestones and objectives. The Base anticipates completing remediation of soil in 2007 or will have effective land use controls in place. Seven sites are expected to be excavated in 2007. All groundwater plumes have been mapped.

The ROI covered by this EA includes the individual project boundaries within the Travis AFB boundary. Within the ROI for this Proposed Action, there are five ERP sites (DP039, SD037, SS015, SS016, and WP017) as shown in **Table 3.11-1**. Building construction and demolition activity at DP039, SD037, SS015, and SS016 sites pose little risk of contact with groundwater contamination. Construction and any soil disturbance activities at ERP sites would adhere to applicable land use control provisions contained in the West/Annexes/Basewide Operable Unit (WABOU) and the North, East, and West Industrial Operable Unit (NEWIOU) Soil Records of Decision (RODs) with respect to those sites.

**Site DP039** (Battery and Electric Shop Neutralization Pit)

Building 755 is a battery and electric shop which used a former battery neutralization pit for the disposal of lead acid solutions. This practice occurred from 1968 to 1978. Liquids from the former sump were discharged to a leach field west of the facility. Excavation and off-base disposal of the sump occurred in July 1993. Contaminants were released underground, so the migration pathways include soil and groundwater. There are no discrete drainage pathways, and the potential for surface runoff is slight. Therefore, the surface water and sediment pathways are not applicable to this site and were not evaluated in the Remedial Investigation (RI).

Ecological receptors include terrestrial wildlife and vegetation. Human receptors may include off-base neighbors that use down gradient water wells. The ROD selected Land Use Controls to restrict access to the lead-impacted area by site workers. A warning sign near the former sump area identifies the controls.

**Site SD037** (Sanitary Sewer along Ragsdale Street)

SD037, the sanitary sewer system in the West Industrial Operable Unit, runs north-south parallel to Ragsdale Street and includes 2,200 feet of piping, as well as associated oil/water separators, sumps, and wash racks. Also included are facilities 837, 838, and 919, which have oil/water separators that discharge to the sanitary sewer. Sumps at facilities 837 and 838 are inactive. The oil/water separator at facility 919 is still active. Exposure to contaminated surface soil exists; potential for exposure to contaminated groundwater exists in the future. Humans have potential access to contaminated groundwater in the aquifer in the future. Humans and ecological receptors have access to contaminated surface soil. Contaminants from the groundwater at SD037 had potentially previously migrated to the west branch of Union Creek (SD033) and Union Creek (SD001), but those contaminants are now addressed via the groundwater pump and treat program, which has halted any contaminated groundwater infiltration into the surface water.

**Site SS015** (Solvent Spillage)

SS015 is located in the western part of the East Industrial Operable Unit. Release previously occurred from an oil/water separator used for industrial purposes (aircraft maintenance). A 2003 soil removal action reduced soil contamination to industrial levels. Remaining contaminated soil is covered by a concrete parking lot. Exposure to groundwater by dermal contact and ingestion is possible; however, there is limited potential for exposure to groundwater by Base personnel.

**Table 3.11-1. Summary of ERP Sites Near IDEA Project Sites**

<b>Site Name</b>	<b>Media of Concern</b>	<b>Contaminants of Concern</b>	<b>Current Status and Future Plans</b>
DP039	Groundwater	Trichloroethane, Dichloroethylene, Trichloroethylene	For all groundwater sites in this table, including DP039, a groundwater pump and treat program under an Interim Groundwater ROD is on-going. Efforts to negotiate and execute a final groundwater ROD are underway. Land Use Controls with respect to soils at this site are in place and will be managed indefinitely. A project that involves demolishing office building 756 (Project D15), a very small building, is adjacent to this site.
SD037	Groundwater	Dichloroethylene, Dichloroethane (EDC), Dichloroethylene, Benzene, Bis (2-Ethylhexyl) Phthalate, Bromodichloromethane, Carbon Tetrachloride, Chloromethane, Naphthalene, Trichloroethylene (TCE), Vinyl Chloride	Land Use Controls that restrict soil disturbance activities and prohibit residential development are in place and will be managed indefinitely. Groundwater pump and treat activities are on-going. Projects C2 (Constructing the in-Flight Kitchen/Fleet Service) and D2 (Demolishing Building 828 – SFS Control) are on this site.
SS015	Groundwater	Dichloroethylene, Dichloroethylene (trans), Benzene, Bis (2-Ethylhexyl) Phthalate, Chlorobenzene, Nickel (Soluble Salts), Tetrachloroethylene, TCE, Vinyl Chloride	A soil removal action was completed in 2003 and Land Use Controls with respect to soil disturbance activities and residential development are in place. An in-situ groundwater treatability study was also completed in 2003. Project D14 (demolishing buildings and plumbing associated with Building 1032) is adjacent to this site.
SS016	Groundwater	Dichloroethylene, Dichloroethylene (trans), Benzene, Chloroform, Methylene Chloride, Tetrachloroethylene, TCE, Vinyl Chloride	Groundwater treatment is on-going. Land Use Controls with respect to soil disturbance activities and residential development are in place. Project D9 is located over this site (demolishing lighting vault (Building 8) after removal of electrical wiring that supplies Building 4).
WP017	Groundwater	EDC, Dichloroethylene (cis), Bis (2-Ethylhexyl), Phthalate, Tetrachloroethylene, TCE	Groundwater treatment of a plume adjacent to this site is on-going. Project D12 (demolishing Sewage Drying Bed) is on this site.

**Site SS016 (Oil Spill Area)**

SS016 is located in the west central part of the East Industrial Operable Unit. Included in this site are the following: Facility 11, Facility 13/14, Facility 20, Facility 42/1941, Facility 139/144, and Storm Sewer System III. Facilities are used for various industrial purposes; releases from oil/water separators, sumps, and surface spills have contributed to a commingled groundwater plume. Most facilities are still active. TCE contaminated groundwater had potentially previously migrated into the storm sewer system and into Union Creek, but the groundwater pump and treat program has halted any contaminated groundwater infiltration into surface water. The area beneath the groundwater plume is covered with concrete, so surface soil is not accessible. Groundwater plume is contained by a network of extraction wells.

**Site WP017 (STP Inactive Oxidation Ponds)**

WP017 is located in the southeastern corner of the East Industrial Operable Unit. Oxidation ponds were active from the early 1950s to the late 1970s, when the Base STP was shut down. Pathways include groundwater transport. Exposure to humans and cattle via water from a down-gradient off-site well is possible. No action with respect to soil was the selected remedial action at WP017 in the NEWIOU ROD. There are no land use controls at WP017 with respect to soil.

## 4.0 Environmental Consequences

**Section 4** presents an evaluation of the environmental impacts that could result from implementing the Proposed Action or the No Action Alternative. Potential impacts are addressed in the context of the scope of the Proposed Action as described in **Section 2** and in consideration of the potentially affected environment, as characterized in **Section 3**. The general approach for this section is to describe the criteria for determining a significant impact followed by a discussion of the impacts that would occur by implementing the Proposed Action for each resource area. The extent to which an action might affect an environmental resource depends on many factors. Environmental resources can be affected directly, indirectly, or not at all.

The significance of an action is measured in terms of context and intensity. The action can be analyzed in several contexts, such as society as a whole (human, national), the ROI, the affected interests, and the locality. Significance can vary with the context of the action.

Intensity refers to the severity of impact. Impacts could be beneficial or adverse. Consideration must be given to whether an impact affects public health or safety, and whether it affects areas having unique characteristics, such as cultural resources or wetlands. The significance of impacts could also depend on the degree of controversy or posing highly uncertain, unique, or unknown risks. Significance can be found where an action sets a precedent for future actions having significant effects, as well as in cases involving cumulative impacts. For example, when considering intensity, consideration must be given to the degree to which the action might adversely affect animal or plant species listed as endangered or threatened or their habitat. Finally, in evaluating intensity, consideration must be given to whether an action violates a law or regulation imposed for the protection of the environment.

### 4.1 Noise

#### 4.1.1 Significance Criteria

Noise associated with aircraft operations at Travis AFB, other transportation-related noise, and construction activities associated with the Proposed Action is considered in this section and compared with the current conditions described in **Section 3.1.2** to assess potential impacts. Data developed during this process also supports analyses in other resource areas.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common noise-related benchmark referred to is an average noise level of 65 dBA. This threshold is often used to determine residential land use compatibility around airports, highways, or other transportation corridors. Two other average noise levels are also useful:

- A Day-Night Average Noise Level of 55 dBA was identified by the USEPA as a level “. . . requisite to protect the public health and welfare with an adequate margin of safety” (USEPA 1974). Noise may be heard, but there is no risk to public health or welfare.
- A Day-Night Average Noise Level of 75 dBA is a threshold above which effects other than annoyance may occur. It is 10 to 15 dBA below levels at which hearing damage is a known risk (Occupational Safety and Health Administration 1983). However, it is also a level above which some adverse health effects cannot be categorically discounted.

Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to average noise levels of 65 dBA, approximately 12 percent of persons so exposed will be “highly annoyed” by the noise. At levels below 55 dBA, the percentage of annoyance is correspondingly lower (less than 3 percent). The percentage of people annoyed by noise never drops to zero (some people are always annoyed), but at levels below 55 dBA it is reduced enough to be essentially negligible.

## 4.1.2 Environmental Consequences

The proposals considered in this assessment do not involve any changes or modifications to aircraft operations at Travis AFB. These operations would continue to be the dominant source contributing to the acoustic environment of the ROI, and would continue as discussed in **Section 3.1.2**.

The proposed project activities would involve demolition, repair, refurbishment, and construction; all of which create noise. To assess potential impacts of this noise, estimated on-site equipment usage was modeled using the Federal Highway Administration's *Roadway Construction Noise Model* (RCNM). The results calculated by the model are conservative. Noise levels in the model originated from data developed by the USEPA, and were refined using an "acoustical usage factor" to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during the project (DOT 2006).

The RCNM collects acoustic data at identified receptor points, and reports  $L_{eq}$  at those points. For this assessment, six points around the largest demolition (Dormitory 1310) and construction (KC-10 Training Facility) projects, at varying distances from the site-center, were identified.

Noise levels at these points are shown in **Table 4.1-1**.

**Table 4.1-1. Noise Exposure from Demolition/Construction**

Activity	Point ID	Distance from Site Center (in feet)	Noise Level (dBA)
Demolition	1	600	60.2
	2	1,100	54.9
	3	2,100	49.3
	4	850	57.2
	5	1,550	51.9
	6	2,970	46.3
Construction	1	575	65.9
	2	1,075	60.5
	3	2,075	54.7
	4	815	62.9
	5	1,520	57.4
	6	2,940	51.7

Source: DOT 2006

To assess the significance of these noise levels, two sensitive land uses on the installation were considered. The Scandia Elementary School is located approximately 3,500 feet southwest of the demolition site; the Travis Elementary School is located approximately 3,700 feet west of the construction site. As indicated in **Table 4.1-1**, at these distances, noise levels associated with construction activities fall well below any significance thresholds.

All construction would occur during the day. As illustrated, noise levels off the installation in Fairfield City resulting from the construction activities would be well below 55 dBA. Since modeled levels do not exceed Fairfield City Noise Ordinances, no adverse impacts would result from implementation of the Proposed Action.

It should be noted that the areas involving construction are situated within areas already exposed to elevated noise from airfield operations. All projects are located in, or immediately proximate to the airfield. The vast majority of these areas are well within the 65 dBA contour created by aircraft noise. Construction noise emanating off-site would probably be noticeable in the immediate site vicinity, but would not be expected to create adverse impacts, or alter noise contours associated with aircraft operations. Furthermore, construction-related noise is intermittent and transitory, ceasing at the completion of construction. The long-term acoustic environment at Travis AFB would not be expected to be influenced by construction activities, and would continue to be dominated by aviation activities.

## 4.2 Land Use

### 4.2.1 Significance Criteria

Land use impacts can result if an action displaces an existing use or affects the suitability of an area for its current, designated, or formally planned use. This analysis considers whether the resulting changes improve public safety and well being, and whether they are compatible with surrounding uses and functions. A proposed activity may be incompatible with local plans and regulations that provide for orderly development to protect the general welfare of the public, or conflict with management objectives of a federal or state agency of an affected area. Compatible land use development would need to comply with federal and state environmental laws and regulations. The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by the Proposed Action and compatibility of the Proposed Action on existing conditions.

Criteria used to evaluate impacts on land use include:

- Potential to disrupt an existing or planned future land use;
- Potential to reduce the suitability of the surrounding land (land not directly impacted by an action) for its current or planned use;
- Potential for inconsistency with the installation's plans, regulations, and guidelines (including the AICUZ program) that provide for appropriate development of the land; and
- Potential for incompatibility of the action with plans and management objectives for adjacent areas under control of other entities (e.g., state, local, federal).

Projects are evaluated for their potential to affect existing and planned land uses either positively (a beneficial effect), or negatively (a detrimental effect).

### 4.2.2 Environmental Consequences

**Land Use.** Overall, the proposed projects are beneficial to the overall functioning and organization of Travis AFB. Each project has been sited appropriately, in consideration of existing environmental and operational constraints and future land use compatibility. Implementation of the Proposed Action would result in an increase in safety and/or functionality for the Base.

None of the construction projects are located in safety zones (areas associated with airfield clearances and explosive setbacks); they are each compatible with AICUZ guidelines and noise exposure level at specific sites (**Table 4.2-1**); and they do not violate height criteria for safe airfield operations. One new construction project (In Flight Kitchen/Fleet Service facility) is located in an ERP area along the flight line, and would require approval of the FUB and coordination with 60 CES/CEV. The project would have to conform with or incorporate any land use controls that apply to the ERP site. Similarly, demolition projects within ERP sites (demolition of Building 755, 756, and 8) may require special procedures or coordination depending on the site status and characteristics. For some projects, noise during construction may interfere with conversations in nearby facilities, but this would be temporary and have no long term impact on land use. All construction and demolition sites are sufficiently distant from the Base boundary that any temporary noise off Base would be minimal.

During construction and demolition, surrounding facilities and activities may experience dust and traffic. This may cause inconvenience to users of specific roads or be bothersome, but these effects would be temporary. Standard measures can reduce these effects, such as providing clearly marked alternate routes and spraying exposed soils, particularly on windy days, or avoiding earth disturbing activities on windy days.

Proposed projects are compatible with future land uses planned for the specific sites on Travis AFB (**Figure 2.1-1**) and the proposed projects would occur entirely within the boundaries of the Base. The location of the new Fitness Center would be convenient to nearby dormitories for unaccompanied soldiers. Some of the representative projects are indicated in Area Development Plans for portions of the Base, such as, demolition of Building 242 (Squadron Operations) and the new Communications facility.

**Table 4.2-1. Proposed Construction and Infrastructure Projects Land Use**

<b>Map ID</b>	<b>Title</b>	<b>Existing Land Use</b>	<b>Future Land Use</b>	<b>Existing Noise Level (CNEL)</b>
C-1	War Reserve Materiel Warehouse Expansion	Administrative	Administrative	<60
C-2	In Flight Kitchen/Fleet Service	Aircraft Operations & Maintenance	Aircraft Operations & Maintenance	70-75
C-3	Consolidated KC-10 Training Facility	Aircraft Operations & Maintenance	Aircraft Operations & Maintenance	65-70
C-4	Dormitory (96 Rm)	Housing (Unaccompanied)	Housing (Unaccompanied)	60-65
C-5	Add to Fitness Center	Open Space	Housing (Unaccompanied)	65-70
C-6	Communications Facility	Aircraft Operations & Maintenance	Aircraft Operations & Maintenance	75
C-7	Addition to Bldg 918	Industrial	Aircraft Operations & Maintenance	65-70
I-1	Replace bulk fuel transfer lines	Housing (Unaccompanied)	Housing (Unaccompanied)	60-65
I-2	Pave parking lot, Bldg 720	Community	Community	60-65
I-3	Pave area north of Bldg 1733	Industrial	Industrial	70-75

Source: USAF nda, Travis GIS/AICUZ

These projects are consistent with future land use plans and benefit attainment of the future desired condition for the Base. Replacing the bulk fuel transfer lines in an Unaccompanied Housing area is a necessary infrastructure improvement and would not alter the existing or future land use of the surrounding housing area.

Demolition projects benefit the Base by freeing up land for new facilities (**Table 4.2-2**). Demolition also improves land utilization for the Base by eliminating structures that no longer serve a purpose, are redundant, or no longer functional for the mission. It allows for more efficiency, less maintenance, and improves the overall appearance and image of the Base. In general impacts associated with land use would be expected to be beneficial.

**Table 4.2-2. Proposed Demolition Projects Land Use**

Map ID	Title	Existing Land Use	Future Land Use	Existing Noise Level
D-1	Demo Bldg 242 (Squad Ops)	Administrative	Administrative	70-75
D-2	Demo Bldg 828 (SFS Control)	Aircraft Operations & Maintenance	Aircraft Operations & Maintenance	
D-3	Demolish Thrift Shop	Community	Community	65-70
D-4	Demo Bldg 755 (Shp Acft Gen Purp)	Industrial	Industrial	60-65
D-5	Demo Bldg 1185 (Rapcon)	Airfield	Airfield	80-85
D-6	Demo Bldg 707 Petrol Ops	Industrial	Industrial	60-65
D-7	Demo Dorm 1328	Housing (Unaccompanied)	Housing (Unaccompanied)	65-70
D-8	Demo Dorm 1310	Housing (Unaccompanied)	Housing (Unaccompanied)	60-65
D-9	Demo Bldg 8, Lighting Vault	Aircraft Operations & Maintenance	Aircraft Operations & Maintenance	75-80
D-10	Demo Dorm 1327	Housing (Unaccompanied)	Housing (Unaccompanied)	65-70
D-11	Demo Dorm 1329	Housing (Unaccompanied)	Housing (Unaccompanied)	65-70
D-12	Demo Sewage Treatment Drying Beds	Open Space	Open Space	75-80
D-13	Demo Bldg 253 (Electric Station)	Community/ Administrative	Administrative	70-75
D-14	Demo Bldg 1032 Including Utilities	Aircraft Pavement	Aircraft Pavement	70-75
D-15	Demo Bldg 756 (Cryogenics)	Industrial	Industrial	60-65

Source: USAF nda; Travis GIS/AICUZ

## 4.3 Air Quality

### 4.3.1 Significance Criteria

Air emissions resulting from the Proposed Action were evaluated in accordance with federal, state, and local air pollution standards and regulations. Air quality impacts from a proposed activity or action would be significant if they:

- Increase ambient air pollution concentrations above any NAAQS;
- Contribute to an existing violation of any NAAQS;
- Interfere with or delay timely attainment of NAAQS; or
- Impair visibility within any federally mandated Federal Class I area.

The approach to the air quality analysis was to estimate the increase in emission levels due to implementation of the Proposed Action.

According to USEPA's General Conformity Rule in 40 CFR Part 51, Subpart W, any proposed federal action that has the potential to cause violations in a NAAQS nonattainment or maintenance area must undergo a conformity analysis. A conformity analysis is not required if the Proposed Action or Alternative Action occurs within an attainment area. Since Solano County is in nonattainment for the O<sub>3</sub> standards, a conformity determination must be performed if project emissions exceed the *de minimis* thresholds of 100 tons per year for the ozone precursors, NO<sub>x</sub> and VOC.

## 4.3.2 Environmental Consequences

### 4.3.2.1 Proposed Action

The Proposed Action would involve construction, demolition, and paving activities, including construction of new buildings and infrastructure, additions to or demolition of existing structures, grading, and paving.

**Construction Emissions.** Emissions during the construction period were quantified to determine the potential impacts on regional air quality. Calculations of emissions from construction, demolition, grading, and paving activities were performed using USEPA emission factors compiled in the *California Environmental Quality Air Quality Handbook* (South Coast Air Quality Management District 1993), *Calculations Methods for Criteria Air Pollution Emission Inventories* (Jagielski and O'Brien 1994), and *Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations* (O'Brien and Wade 2002).

The emission factors for building construction include contributions from engine exhaust emissions (e.g., construction equipment, material handling, and workers' travel) and fugitive dust emissions (e.g., from grading activities). Demolition emissions evaluated include fugitive dust and transport of demolition debris offsite. Site preparation, grading, and trenching emissions include fugitive dust from ground disturbance, plus combustive emissions from heavy equipment during the entire construction period. Paving emissions include combustive emissions from bulldozers, rollers, and paving equipment, plus emissions from a dump truck hauling pavement materials to the site. Total estimated emissions in tons that would occur from construction, demolition, grading, and paving activities under the Proposed Action are presented in **Table 4.3-1**. The table also presents the average emissions in tons per year during the planned five-year construction period.

Emissions generated by construction, demolition, and paving projects are temporary in nature and would end when construction is complete. The emissions from fugitive dust (PM<sub>10</sub>) would be considerably less than those presented in **Table 4.3-1** due to the implementation of control measures in accordance with standard construction practices. For instance, frequent spraying of water on exposed soil during construction, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard landscaping procedures that could be used to minimize the amount of dust generated during construction. Using efficient practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment. Vehicular combustion emissions from construction worker commuting may be reduced by carpooling.

**Table 4.3-1. Construction Emissions – Proposed Action**

Source	Total Emissions during Construction Period (Tons)				
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Construction	12.4	3.9	57.0	0.0	4.0
Demolition	6.3	1.2	6.0	0.0	2.4
Grading/Trenching	2.6	0.5	4.2	0.4	0.5
New Pavement	1.1	0.2	2.1	0.1	0.2
<b>TOTAL</b>	<b>22.4</b>	<b>5.8</b>	<b>69.3</b>	<b>0.6</b>	<b>7.1</b>
<b>Annual Average Emissions<sup>1</sup></b>	<b>4.5</b>	<b>1.2</b>	<b>13.9</b>	<b>0.1</b>	<b>1.4</b>
<b>De Minimis Threshold (Conformity)</b>	<b>NA</b>	<b>100</b>	<b>100</b>	<b>NA</b>	<b>NA</b>
<b>10 percent of Regional Inventory</b>	<b>90,163</b>	<b>16,665</b>	<b>22,695</b>	<b>2,337</b>	<b>7,163</b>

Note: 1. Assumes construction would occur over a five-year period.

In general, combustive and fugitive dust emissions may produce localized, short-term elevated air pollutant concentrations, but these would not result in any long-term impacts on the air quality in Solano County. The temporary, relatively low levels of construction-related emissions of PM<sub>10</sub> and sulfur oxides (SO<sub>x</sub>) are not expected to adversely impact the air quality or visibility in any of the PSD Class I areas within the area.

**Operational Emissions.** Upon implementation of the Proposed Action, air emissions are expected to be slightly more than current emissions, due to utilities such as boilers, heaters, and emergency generators being included with the new facilities. However, new utility equipment would be more efficient and have lower air pollutant emissions than older boilers and heaters at the Base. Nevertheless, the installation or modification of any air emission sources, such as boilers and heaters, emergency generators, etc., may trigger permitting requirements with the BAAQMD. It is expected that the new operational emissions would not result in any long-term impacts on the air quality in Solano County.

These projected annual emissions are well below the *de minimis* thresholds for conformity and less than 10 percent of the regional emissions, as shown in **Table 4.3-1**. A conformity determination, therefore, is not required for this action.

## **4.4 Safety**

### **4.4.1 Significance Criteria**

Impacts are assessed according to the potential to increase or decrease safety risks to personnel, the public, and property. Proposal-related activities are considered to determine if additional or unique safety risks are associated with their undertaking. If any proposal-related activity indicated a major variance from existing conditions, it would be considered a safety impact.

### **4.4.2 Environmental Consequences**

Under the Proposed Action, the 60 AMW would develop the installation to continue its ability to support its mission. To support these efforts, demolition, improvements, modifications, and other changes to facilities and the unit's supporting infrastructure would be accomplished. Providing new facilities that are properly sited with adequate space and a modernized supporting infrastructure would generally enhance safety during the conduct of required training, maintenance and support procedures, security functions, and other daily operations conducted by the unit in support of its mission. Providing improvements to facilities, an enhanced work environment, and increasing efficiency, would result in positive safety impacts. Overall, in combination, the construction of new facilities, modifications/alterations to existing facilities and infrastructure, and demolition of outdated facilities would be expected to enhance ground, AT/FP, explosive, and flight safety considerations at the unit.

Activities involved in the proposed facility construction, modification, and demolition are not unique. Standard building and construction procedures and BMPs would be followed by the construction contractor(s). Implementation of the Proposed Action would involve ground activities that may expose workers performing the required demolition, site preparation, grading, and building construction to some risk. The U.S. Department of Labor (DOL), Bureau of Labor Statistics maintains data analyzing fatal and non-fatal occupational injuries based on occupation. Due to the varying range of events classified as non-fatal injuries, the considerations described below focus on fatal injuries since they are the most catastrophic. Data are categorized as incidence rates per 100,000 workers employed (on an annual average) in a specific industry (Standard Industrial Code [SIC]).

To assess relative risk associated with this proposal, it was assumed that the industrial classifications of workers involved are the Construction Trades (SIC-15, 16, and 17). Based on DOL data and considerations of worker exposure, the incidence of a fatal injury would be statistically predicted to be from 0.9 to 1.0 out of 10,000 (DOL 2005). Although DoD guidelines for assessing risk hazards would categorize the hazard category as "catastrophic" (because a fatality would be involved), the expected frequency of the occurrence would be considered "remote" (MIL-STD-882 1993). While the potential

result must be considered undesirable, risk is low. Strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with these construction activities.

No facility or infrastructure improvements associated with the Proposed Action would encroach on explosive safety or airfield clear zones, etc. Furthermore, no proposed activities would be expected to exacerbate the wildlife strike hazard at Travis AFB. Therefore, there are no adverse impacts to explosive or flight safety anticipated as a result of implementation of the Proposed Action.

In general, implementation of the Proposed Action would result in positive impacts to safety.

## 4.5 Geologic Resources

### 4.5.1 Significance Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards and soil limitations are considered when evaluating the potential impacts associated with the implementation of a proposed action on geological resources. If a proposed action were to substantially affect or be substantially affected by any of these features, impacts would be considered significant. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of potential impacts to geologic resources typically includes identification and description of resources that could potentially be affected, examination of the potential effects that an action may have on the resource, assessment of the significance of potential impacts, and provision of management measures in the event that potentially significant impacts are identified. Analysis of impacts to soil resources resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soil resources can result from earth disturbance that would expose soil to wind or water erosion.

Adverse impacts to soils and the associated potential indirect impacts to water resources can be minimized through the implementation of BMPs such as those typically required to be in compliance with the CWA. The NPDES program, administered by the USEPA or state environmental quality departments, requires a Construction General Permit for surface disturbance of one acre or more. Compliance with this permit involves development and implementation of a SWPPP and erosion and sediment control plan that includes site-specific management measures.

### 4.5.2 Environmental Consequences

**Geology.** The geology of the Travis AFB area does not present any specific constraints to future Base development. However, the possibility of an earthquake continues to exist with the proximity of the Base to the San Andreas, Hayward, and Calaveras fault zones and the Green Valley fault located 20 and 10 miles from the Base perimeter, respectively. To determine the potential and likelihood of property damage at a site, a geotechnical investigation by a qualified professional could evaluate potential site-specific hazards. Various hazard-reduction techniques are available, such as soil improvement or special foundation design, which if implemented would minimize impacts from such an event.

**Soils.** Under the Proposed Action, demolition and construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbances. Implementation of the Proposed Action would result in a net decrease of 170,898 SF (3.9 acres) of impervious surfaces for the building footprints and pavements of the proposed facilities. Any potential impacts resulting from erosion during construction activities would be controlled through the use of standard erosion control measures such as soil compaction, water, sandbags, silt fencing, earthen berms, or temporary sedimentation basins. Soil disturbance at ERP sites would be conducted in accordance with applicable soil management plans included for those sites as land use controls. Consequently, impacts from erosion would be minimal. It is likely that grading of existing soils and placement of structural fill for proposed facilities would not substantially alter existing soil conditions at Travis AFB as much of the property has been previously

disturbed as a result of prior development and no longer includes the naturally occurring surface soils. Additionally, several of the proposed building footprints are located on other existing building footprints, or previously disturbed soils. Impacts to earth resources would be expected to be minimal under the Proposed Action.

**Topography.** Since the Base land surface is generally flat, implementation of the Proposed Action is not anticipated to cause or create changes to the topography of Travis AFB or the surrounding area.

## 4.6 Water Resources

### 4.6.1 Significance Criteria

Evaluation criteria for impacts associated with implementation of the Proposed Action on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. Implementation of the Proposed Action would have adverse effects if it were to do one or more of the following:

- Reduce water availability to or interfere with the supply of existing users;
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources;
- Endanger public health by creating or worsening adverse health hazard conditions;
- Threaten or damage unique hydrologic characteristics; or
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

Impacts of flood hazards related to proposed actions can be significant if such actions are in areas with high probabilities of flooding or in some way alter flood conveyance.

### 4.6.2 Environmental Consequences

With regard to water resources, the primary concerns associated with implementing the Proposed Action include effects on water quality during construction activities, and changes to surface water drainage and groundwater recharge due to increased impervious surface.

**Groundwater.** The rate of groundwater recharge of the shallow aquifer located directly beneath the installation would have minor beneficial impacts as a result of the slight decrease in impervious surfaces as a result of implementation of the Proposed Action. Given the developed nature of the Base and the high percentage of impervious surfaces already existing, the benefits derived as a result of the percent change in groundwater recharge is expected to be minimal. While the net result would be a decrease in impervious surface, any temporary increase in surface water runoff as a result of individual construction projects would be attenuated through the use of permit-related temporary and/or permanent drainage management actions such as detention/retention basins and BMPs. A potential management strategy to further minimize adverse impacts includes the integration of water harvesting and open natural space into the design of the proposed sites such that discharge exiting each site post-construction would be equal to or less than existing conditions. The use of these features would also increase groundwater recharge through direct percolation offsetting the loss of pervious surface due to future construction.

**Surface Water.** Implementation of the Proposed Action would involve a net decrease of 170,898 SF (3.9 acres) of impervious surfaces for the building footprints and pavements of the proposed facilities. Under the conditions of the Travis AFB industrial storm water permit, a Notice of Intent is required to be filed with the State Regional Water Quality Control Board for construction activities disturbing more than one acre. Additionally, implementation of BMPs to minimize the potential for exposed soils or other contaminants from construction activities to reach nearby surface waters in accordance with the 60 AMW SWPPP is required. Such BMPs typically include the use of silt fences, covering of soil stockpiles, use of secondary containment for the temporary storage of hazardous liquids, detention/retention ponds, and establishment of buffer areas, as appropriate.

Implementation of the Proposed Action would decrease the amount of impervious surface on the installation, resulting in the potential for a very minor decrease in the amount of surface runoff. The proposed construction activities may require modifications to the installation storm drainage system (e.g., drainage ditches and basins) and an update to the SWPPP in order to properly manage storm water. Site drainage would be addressed within the updated SWPPP such that there would be no deleterious impacts to receiving waters as a result of the Proposed Action.

Overall, individual construction activities would have the potential for minor adverse effects on surface water quality, but the use of BMPs specified in the 60 AMW SWPPP and development of site-specific SWPPPs (as required) would minimize adverse effects.

**Floodplains.** In accordance with EO 11988 *Floodplain Management*, the USAF must demonstrate that there are no practicable alternatives to construction within floodplains (if construction is proposed within a floodplain). None of the projects included as part of the Proposed Action would occur within the 100-year floodplain. The Proposed Action would not have a direct effect on floodplains. The minor increase of impervious surfaces on the installation is not expected to affect the 100-year or 500-year predicted flood elevations of Union Creek.

## 4.7 Biological Resources

### 4.7.1 Significance Criteria

This section evaluates the potential impacts to biological resources associated with implementation of the Proposed Action. The significance of impacts to biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; (2) the proportion of the resource that would be affected relative to the occurrence of the resource in the region; (3) the sensitivity of the resource to proposed activities; and (4) the duration of the potential impact. Biological impacts would be considered significant if listed species or high quality habitats were adversely affected. Impacts would also be considered significant if disturbances caused reductions in population size or permanent changes to the distribution of a listed species.

### 4.7.2 Environmental Consequences

Implementation of the Proposed Action would result in a total loss of approximately 0.75 acre of natural habitat, primarily grasslands, due to building construction, parking lots, and paving. Demolition projects would result in additional open space, which could be managed for natural resource values. Some of the development would occur in areas that have been disturbed by past construction related activities. A few scattered landscaping trees and shrubs would be cleared for the construction of new facilities and pavement; however, no floodplain areas would be impacted by implementation of the Proposed Action. A summary of potential impacts on biological resources are presented in **Tables 4.7-1** through **4.7-3**.

**Vegetation.** Minor impacts on natural vegetation would occur as a result of construction and habitat loss associated with the Proposed Action; however, impacts are anticipated to be minimal and largely avoidable. In some cases, the project could be carried out in such a way to achieve benefits to habitat and natural communities. A narrative description of significance and avoidance follows for those projects that may affect biological resources.

Natural communities affected by proposed projects would include grasslands and wetlands. Impacts to natural vegetation would be minimized through implementation of BMPs. Natural areas disturbed by infrastructure projects and activities associated with demolition or construction (e.g., staging of vehicles and equipment, debris) would be revegetated with appropriate native species. Previously landscaped or urban areas affected by projects would be landscaped in accordance with Travis AFB standards.

Project sites D5 and D12 are adjacent to existing wetlands. Impacts to the adjacent wetlands would be avoided by ensuring that equipment operates well outside the wetlands and standard construction practices are used (BMPs) to minimize effects of runoff from the work site. Following completion of these projects, the sites would be revegetated with appropriate native species.

**Table 4.7-1. Proposed Demolition Projects**

<b>Map ID</b>	<b>Project Number</b>	<b>Project</b>	<b>Evaluation of Significance</b>
D-1	XDAT961031M4	Demo Bldg 242 (Squad Ops)	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. Change of land use from developed to open space could have net benefit for natural resources.
D-2	XDAT971123	Demo Bldg 828 (SFS Control)	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. No known significant resource constraints due to change of land use from developed to open space.
D-3	XDAT981175	Demolish Thrift Shop	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. No known significant resource constraints due to change of land use from developed to open space.
D-4	XDAT971136	Demo Bldg 755 (Shp Acft Gen Purp)	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. No known significant resource constraints due to change of land use from developed to open space.
D-5	XDAT101077	Demo Bldg 1185 (Rapcon)	Minimal impacts to wetlands with implementation of avoidance measures and BMPs. Minimal impacts on Burrowing Owl with implementation of INRMP avoidance protocols and on California tiger salamander by avoidance of demolition during the breeding season.
D-6	XDAT101284	Demo Bldg 707 Petrol Ops	No known significant resource constraints.
D-7	XDAT991017	Demo Dorm 1328	No known significant resource constraints.
D-8	XDAT991015	Demo Dorm 1310	No known significant resource constraints.
D-9	XDAT101228	Demo Bldg 8, Lighting Vault	No known significant resource constraints.
D-10	XDAT991016	Demo Dorm 1327	No known significant resource constraints.
D-11	XDAT991018	Demo Dorm 1329	No known significant resource constraints.
D-12	XDAT051034	Demo Sewage Treatment Drying Beds	Minimal impacts to wetlands with implementation of avoidance measures and BMPs. Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols.
D-13	XDAT051087	Demo Bldg 253 (Electric Station)	No known significant resource constraints.
D-14	XDAT051040	Demo Bldg 1032 Including Utilities	No known significant resource constraints.
D-15	XDAT051038	Demo Bldg 756 (Cryogenics)	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. No known resource constraints due to change of land use from developed to open space.

**Table 4.7-2. Proposed Construction Projects**

<b>Map ID</b>	<b>Project Number</b>	<b>Project</b>	<b>Evaluation of Significance</b>
C-1	XDAT048007	War Reserve Materiel Warehouse Expansion	Minimal loss of natural grassland and habitat for associated species (0.10 acre). Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols and minimal impacts to special-status plants and vernal pools with implementation of avoidance measures and BMPs.
C-2	XDAT943008	In Flight Kitchen/Fleet Service	Provided the construction occurs only on area that is already paved, there are no known significant resource constraints.
C-3	XDAT103003	Consolidated KC-10 Training Facility	Minimal loss of plus exterior footprint would be lost of ruderal vegetation (0.55 acre). Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols. With implementation of avoidance protocols this would not be a significant impact.
C-4	XDAT091001	Dormitory (96 Rm)	No known significant resource constraints. Negligible loss of natural communities because this project would occur on the same site as a building that would be demolished (see project D8).
C-5	XDAT953015P2	Add to Fitness Center	Minimal loss of landscaped and ruderal grassland and habitat for associated species (0.10 acre). Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols.
C-6	XDAT063009	Communications Facility	Provided the construction occurs only on area that is already paved, there are no known significant resource constraints.
C-7	XDAT081004	Addition to Bldg 918	Minimal loss of ruderal grassland and habitat for associated species (0.04 acre).

**Table 4.7-3. Proposed Infrastructure Projects**

<b>Map ID</b>	<b>Project Number</b>	<b>Project</b>	<b>Evaluation of Significance</b>
I-1	XDAT051008	Replace bulk fuel transfer lines	No known significant effects on resources. Project area is paved or managed (landscaped) grassland.
I-2	XDAT971170C2	Pave parking lot, Bldg 720	Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols.
I-3	XDAT031076	Pave area north of Bldg 1733	Minimal loss of low quality ruderal or managed (landscaped) grassland and habitat for associated species (0.06 acre). Minimal impacts to Burrowing Owl with implementation of INRMP avoidance protocols.

Potential impacts to natural wetlands vegetation from construction projects would occur in the Grazing Area NRMU and the Cantonment NRMU, associated with projects C-1, C-3, and C-5. Although project C-1 is near vernal pool habitat, impacts to special-status vernal pool species (see **Table 4.7-2**) would not be anticipated, as the vernal pool habitat is several hundred feet from the proposed construction site. Ensuring that vehicles, foot traffic, and construction equipment and debris are kept at an appropriate distance from the pools, especially during inundation and blooming in the spring would avoid impacts to those resources. Loss of grassland and habitat for associated species would occur due to implementation of this project. Project C-3 would result in the loss of either managed grassland or ruderal grassland; this area is within the developed urban Cantonment NRMU, however, and the habitat quality is considered to be low. Similarly, projects C-5 and C-7 would result in the loss of managed (landscaped) grassland with low habitat value. The removal of these grasslands would be less than significant because the affected patches are small (cumulative less than 1 acre distributed among four locations) and dominated by non-native plant species.

Infrastructure projects I-2 and I-3 would result in the loss of heavily-impacted open space and ruderal grassland that are currently used as parking lots. Minimal vegetation resource values would be lost.

**Wildlife.** Several special-status birds, including Swainson's Hawk, Western Burrowing Owl, and Loggerhead Shrike could be temporarily impacted by demolition, construction, and infrastructure projects if present during project implementation. Noise and visual disturbance due to construction equipment and vehicular and foot traffic could cause individual animals to alter their foraging and nesting behaviors. These impacts on Swainson's Hawk and Loggerhead Shrike would be minimal. If burrowing owls occupy habitat near the project sites, implementation of the impact avoidance measures identified for burrowing owl in the INRMP would avoid and minimize potential impacts (USAF 2003a). The avoidance protocol states that no disturbance should occur within 50 meters (160 feet) of occupied burrows during the non-breeding season of September 1 through January 31, and 75 meters (250 feet) during the breeding season, February 1 through August 31.

The location for project D-5 is close to California tiger salamander breeding habitat. Although the salamander is not known to inhabit the site (it is known to occupy habitats adjacent to Travis AFB), the probability for impacts would be minimized by implementing the project outside of the breeding season when they are in upland dens.

## 4.8 Cultural Resources

### 4.8.1 Significance Criteria

A number of federal regulations and guidelines have been established for the management of cultural resources. Section 106 of the National Historic Preservation Act (NHPA), as amended, requires federal agencies to take into account the effects of their undertakings on historic properties. Historic properties are cultural resources that are listed on, or eligible for listing on, the NRHP. Eligibility evaluation is the process by which resources are assessed relative to NRHP significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Under federal law, impacts to cultural resources may be considered adverse if the resources have been determined eligible for listing on the NRHP or have been identified as important to Native Americans as outlined in the American Indian Religious Freedom Act and EO 13007, *Indian Sacred Sites*.

DoD American Indian and Alaska Native Policy (1999) provides guidance for interacting and working with federally recognized American Indian governments. DoD policy requires that installations provide timely notice to, and consult with, tribal governments prior to taking any actions that may have the potential to significantly affect protected tribal resources, tribal rights, or American Indian lands.

Analysis of potential impacts to cultural resources listed or eligible for listing on the NRHP considers direct impacts that may occur by:

- physically altering, damaging, or destroying all or part of a resource;
- altering characteristics of the surrounding environment that contribute to the resource's significance;
- introducing visual or audible elements that are out of character with the property or alter its setting;
- neglecting the resource to the extent that it deteriorates or is destroyed;
- or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

## 4.8.2 Environmental Consequences

**Archaeological Resources.** Under the Proposed Action, Travis AFB would implement 25 projects that include facility demolition, additions to existing facilities, new construction and infrastructure improvements. Although the projects included as part of the Proposed Action involve some level of ground disturbance, all are situated in areas that are heavily disturbed or have been previously surveyed for cultural resources. No archaeological resources have been identified where the projects associated with the Proposed Action would occur (**Figures 2.1-3 and 3.8-1**); thus, none of the projects are expected to impact historic or Native American archaeological resources. In the event of a discovery during construction, all work in the immediate vicinity of the discovery would be halted until the resources are identified and documented. If the resource is determined to be eligible for the NRHP, the USAF will develop an appropriate management strategy in consultation with the SHPO and other consulting parties. As outlined in the Integrated Cultural Resources Management Plan (ICRMP) (USAF 2003b), and in compliance with federal laws (Archaeological Resources Protection Act [ARPA], Native American Graves Protection and Repatriation Act [NAGPRA], and NHPA), concerned tribal representatives would be notified and consulted about the proposed treatment of human remains and funerary and sacred objects should these be discovered during implementation of the Proposed Action.

**Properties of Traditional, Cultural, and Religious Significance to Native American Tribes.** There are no known traditional resources at Travis AFB. Therefore, impacts to traditional resources are not anticipated to result from implementation of the Proposed Action.

**Architectural Resources.** Under the Proposed Action, 15 projects would involve building alterations or demolitions. None of the buildings associated with the alterations or demolitions are NRHP-listed or eligible for listing.

Construction project C7 involves a 1,625 square foot addition to Building 918, which is a post-Cold War building within the proposed AFSWP Q Area Historic District (**Figures 2.1-3 and 3.8-1**). This project is not anticipated to adversely impact the proposed Historic District. Building 918 is one of several buildings located in the western portion of the proposed Historic District that are non-contributing properties to the historical significance of the proposed district. The addition to Building 918 under the Proposed Action would not adversely affect the characteristics of the surrounding environment that contribute to the significance of the Historic District, or introduce visual elements that are out of character, or that alter its setting.

Therefore, adverse impacts to any of the potentially NRHP-eligible buildings or proposed Historic Districts are not anticipated for the 10 facility and infrastructure construction projects of the Proposed Action.

## 4.9 Socioeconomics

### 4.9.1 Significance Criteria

This section identifies potential social and economic impacts that could result from implementing the proposed construction and demolition projects at Travis AFB.

Potential socioeconomic impacts are assessed in terms of the direct effects of the proposal on the local economy and related effects on population and socioeconomic attributes. With regard to environmental justice issues, county figures are compared to regional and state demographics to determine proportional differences. Areas containing relatively high disadvantaged populations are given special consideration regarding potential impacts in order to address the potential for disproportionately high or adverse human health or environmental effects on these communities.

Significance of the impact of expenditures is assessed in terms of their direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts varies depending on the location of a proposed action; for example, implementation of an action that creates 20 employment positions may be unnoticed in an urban area but may have significant impacts in a more rural region. If potential socioeconomic impacts would result in substantial shifts in population trends, or adversely affect regional spending or earning patterns, they would be considered significant. With regard to environmental justice, impacts would be significant if any disproportionately high and adverse human health and/or environmental effects would occur to identified minority and low-income populations.

## 4.9.2 Environmental Consequences

***Social and Economic Condition.*** Under the Proposed Action, several demolition and construction projects would take place over the next five years. These projects represent capital expenditures for some percentage of the cost for materials and supplies in the local area. They also generate jobs for skilled and unskilled construction workers in the local region. Because the timing of these projects is dependent on flow of federal funds, it is not possible to define what amount would be spent in any given year. However, Travis AFB has a more or less continuous economic impact on the local and regional economy (estimated at around \$1 billion annually). The proposed work is a continuation of this source of revenues and indirect jobs. The proposal would not generate any direct military jobs per se, and therefore, expenditures, employment, and population are expected to remain at about current levels. The Proposed Action represents a continuation of the positive economic impact of Travis AFB on the local economy.

***Environmental Justice.*** To comply with EO 12989, ethnicity and poverty status in the ROI have been examined and compared to regional and state statistics to determine if minority or low-income groups could be disproportionately affected by the implementation of the Proposed Action. As described in **Section 3.9.2**, disadvantaged groups within the ROI, including minority and low-income populations, do not represent a disproportionate segment of the ROI population. The poverty levels in the immediate area are lower than the MSA and state of California, and the total minority population is about the same, although African Americans make up a larger segment of the minority population than in the MSA and state. Based on these data, the immediate local area does not meet the criteria of an environmental justice population and could therefore not experience disproportionate impacts relative to the overall population. In addition, the Proposed Action would not cause significant negative or detrimental impacts on health and safety for persons in the area.

In addition, EO 13045 requires that federal agencies identify and assess environmental health and safety risks that might disproportionately affect children. The Proposed Action would not pose any adverse environmental health or safety risks to children living on or in the vicinity of the Base. The likelihood of the presence of children at construction sites where the Proposed Action would occur on Base is considered minimal, which further limits the potential for effects. Therefore, implementation of the Proposed Action would not have disproportionate adverse environmental health and safety impacts on children.

## 4.10 Infrastructure

### 4.10.1 Significance Criteria

Effects on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater system demand, and transportation patterns and circulation. Impacts might arise from physical changes to

circulation, construction activities, introduction of construction-related traffic on local roads, changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to Base activities. An effect might be considered adverse if an action exceeds capacity of a utility. In considering the basis for evaluating the significance of impacts on solid waste, several items are considered. These items, among others include evaluating the degree to which the Proposed Action could affect the existing solid waste management program and capacity of area landfills.

#### 4.10.2 Environmental Consequences

**Airfield.** All activities related to the Proposed Action would be coordinated with Airfield Management and the Environmental Flight prior to construction. Special care would be taken during removal of airfield obstructions so that fugitive dust emissions do not adversely affect mission operations associated with lack of visibility. If dust suppression methods are used prior, during, and after construction, no adverse impacts on airfield operations are anticipated to result from implementing the Proposed Action.

**Electrical System.** Implementation of the Proposed Action would result in minor impacts to the electrical system. The proposed construction projects would tie into existing electrical infrastructure. The proposed construction projects would use sustainable design concepts to the greatest extent possible, resulting in more efficient energy use. This more efficient use of energy would likely be a minor difference compared with the total Base usage.

**Heating and Cooling System.** Implementation of the Proposed Action would result in minor impacts to the heating and cooling systems. The proposed construction projects would use sustainable design concepts to the greatest extent possible, resulting in a more efficient use of energy than current facilities. This more efficient use of energy would likely be a minor difference compared with the total Base usage of electricity.

**Liquid Fuel System.** Implementation of the Proposed Action would result in a positive impact to the liquid fuel system on Base as the installation of bulk fuel lines would improve the Base infrastructure capacity to meet the demands of the future.

**Natural Gas System.** Implementation of the Proposed Action would result in minor impacts on the Base's natural gas system. The proposed construction projects would use sustainable design concepts to the greatest extent possible, resulting in a more efficient use of energy than current facilities. This more efficient use of natural gas would likely be a minor difference when compared to the total Base usage of natural gas. The proposed construction projects would tie into existing gas lines that are sufficient to meet demands and would not require the construction of new lines.

**Sanitary Sewer System.** Implementation of the Proposed Action would result in minor impacts on the Base's sanitary sewer system. The proposed construction projects would tie into existing sanitary sewer lines that are sufficient to meet projected demands. The proposed construction projects would use sustainable design concepts to the greatest extent possible. This more efficient use of the sewer system would likely be a minor difference compared with the total Base usage.

**Stormwater Drainage System.** The implementation of the Proposed Action would result in an approximate 170,898 SF (3.9 acres) net decrease in impervious surface which would have minor beneficial impacts to the stormwater drainage system (**Section 4.6 Water Resources**). The proposed construction activities would require modifications to the installation storm drainage system (e.g., drainage ditches and basins) and an update to the 60 AMW SWPPP in order to properly manage storm water. Site drainage would be addressed within the updated SWPPP such that there would be no deleterious impacts to receiving waters as a result of implementing the Proposed Action.

Construction of new buildings and parking lots would create the opportunity to incorporate stormwater management features and bioretention devices into the design of the project. Options such as detention basins and infiltration structures would be considered during the design phase in accordance with the SWPPP (USAF 2004b).

**Solid Waste Management.** Short-term, direct, minor adverse effects would result from increased municipal solid waste production during construction. Solid waste generated from the proposed

construction and demolition activities would consist of building materials such as solid pieces of concrete, metals (conduit, piping, and wiring), and lumber.

Analysis of effects associated with implementation of the Proposed Action is based on the following assumptions: (1) approximately 3.89 pounds of construction debris are generated for each square foot of floor area for new structures and (2) approximately 155 pounds of demolition debris are generated for each square foot of floor area for nonresidential structures (USEPA 1998). **Table 4.10-1** depicts the estimated tonnage of C&D waste that would be generated under the Proposed Action.

**Table 4.10-1. Project Construction and Demolition Waste Generated for Proposed Action**

Type of C&D Waste	Total C&D Waste (tons)
Construction	518
Demolition	228,435
Total	228,953

Approximately 228,953 tons of C&D waste would be generated from implementing the Proposed Action. Contractors would be required to recycle C&D waste to the greatest extent possible as part of Base policy. With adequate available landfill capacity within the surrounding area, these quantities would not cause an adverse impact to area landfills.

**Transportation System.** Implementation of the Proposed Action would require the delivery of materials and the removal of debris from C&D sites. Construction traffic would comprise a small percentage of the total existing traffic. Many of the vehicles would be driven to and kept on-site for the duration of the project, resulting in relatively few additional trips. Potential increases in traffic volume associated with implementation of the Proposed Action would be temporary. All road and lane closures would be coordinated with the Transportation Squadron and Airfield Management and would be temporary in nature; therefore no adverse impact on the transportation system is anticipated.

**Potable Water System.** Implementation of the Proposed Action would result in minor impacts on the potable water system. The proposed construction projects would tie into existing water infrastructure that is sufficient to meet demands. Additionally, the Proposed Action would implement sustainable design concepts to the greatest extent possible that would minimize the minor increase in water consumption.

## **4.11 Hazardous Materials and Waste**

### **4.11.1 Significance Criteria**

The qualitative and quantitative assessment of impacts focuses on how and to what degree the alternatives would affect hazardous materials usage and management, hazardous waste generation and management, and waste disposal. The assessment considers the potential for increase in the quantity or toxicity of hazardous substances used or generated. Significant impacts could result if a substantial increase in human health risk or environmental exposure was generated at a level that cannot be mitigated to acceptable standards.

Impacts to hazardous materials and waste management would be considered significant if the action resulted in the generation of 100 kilograms (or more) of hazardous waste or one kilogram (or more) of an acutely hazardous waste in a calendar month, resulting in increased regulatory requirements or if implementation of the Proposed Action resulted in a spill or release of a reportable quantity of a hazardous substance as defined by the USEPA in 40 CFR Part 302. Impacts would also be considered significant if the action resulted in manufacturing, use, or storage of a compound that requires notifying the pertinent regulatory agency according to EPCRA or the action resulted in an increase in the potential for exposure of the environment or public to any hazardous material and/or waste through release or disposal practices.

### **4.11.2 Environmental Consequences**

**Hazardous Materials.** Construction activities associated with the Proposed Action would require the temporary use of certain hazardous materials such as sealants, primers, paints, solvents, and preservatives.

The construction equipment proposed for this project would utilize various fuels, coolants, lubricating oils, and hydraulic fluids. Hazardous materials and petroleum products associated with Travis AFB operations would continue to be managed in accordance with all federal, state, and local regulations, as well as existing Travis AFB procedures. If spilled or leaked onto the construction site, these could be regulated as hazardous substances. During construction, contractors would be required to conduct daily equipment inspections to minimize the potential for a release of hazardous substances. In addition, contractors would be required to store all fuels and other materials in appropriate containers in designated locations. Furthermore, the maintenance or repair of construction equipment would not be conducted on Travis AFB.

**Hazardous Wastes.** Under the Proposed Action, Travis AFB would continue to perform the same functions as it is currently assigned. Because aircraft maintenance, vehicle maintenance, and facility maintenance would remain the same or slightly higher as under current operations, the amount of hazardous and petroleum wastes generated would generally remain the same over the long term. Although some additional hazardous and petroleum wastes would be generated by construction activities, generation of these wastes would occur only for the short duration of the construction activities and would be managed in compliance with all applicable regulations.

Under the Proposed Action, construction and future operation of the proposed facilities would not have a substantial impact on the use, storage, or generation of hazardous wastes at the installation. If a contractor cannot avoid the generation of hazardous waste, the contractor would be responsible for the final disposition of those materials per contract specifications and environmental laws.

Under the Proposed Action, training requirements and aircraft sortie levels would remain the same as current operations and the amount of hazardous and petroleum wastes generated from those operations would remain the same over the long term. The new and remodeled facilities would be constructed with berms and drains leading to oil/water separators, if required, to contain releases of petroleum products. Hazardous materials and waste management plans would be updated, as necessary, as successive construction projects are completed.

**Asbestos and Lead-Based Paint.** Several demolition projects are proposed as part of the Proposed Action. Given the various ages of the buildings to be demolished it is likely that ACM and LBP would be present in some of the structures. It is anticipated that the costs associated with abatement would affect the overall demolition costs associated with that structure. If asbestos is present, a licensed abatement contractor would remove all friable asbestos materials from the buildings prior to demolition. Travis AFB would ensure the contractor's compliance with the Travis AFB *Asbestos Management and Operations Plan* (USAF 2004f). If lead-based paint is found to be present, a licensed contractor would be retained to conduct an evaluation and determine disposal alternatives.

**Pollution Prevention.** Solid waste generated from implementation of the Proposed Action would consist of building materials such as drywall, solid pieces of concrete, metals (conduit, piping, and wiring), and lumber. Arrangements by the contractor would be made for the storage, disposal, or recycling of C&D debris at a licensed disposal facility. Contractors would be required to recycle C&D debris to the greatest extent possible in accordance with the Base policy. All solid waste would be disposed of in accordance with applicable federal, state, local, and USAF regulations. With adequate available landfill capacity in the surrounding area, these quantities would not cause adverse impacts to the capacity of the area landfill (Section 4.10.2).

**Environmental Restoration Program.** The Proposed Action includes the construction of facilities within or near five ERP sites (Figure 2.1-2). The projects in the Proposed Action would be constructed or demolished before these sites are fully remediated. Any building demolition activity on SS015 and SS016 would not come into contact with the groundwater contamination at these sites. Land Use Controls concerning soil disturbance activities would be observed. The other sites present low relative risks and the demolition and small building construction activities would not be expected to impact the contamination.

Worker protection from potential hazardous materials should be evaluated and discussed in an appropriate health and safety work plan (HSWP) prior to any new construction. Based on this evaluation, it could be

necessary for construction workers to utilize proper personal protective equipment per the HSWP while excavating or working near some of the sites mentioned above.

#### **4.12 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented and there would be no effect on noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomic and environmental justice, infrastructure, and hazardous materials and waste management. However, with the No Action Alternative, some facilities in their current locations would be inconsistent with proposed future land use. Future land use, as proposed in the Travis AFB General Plan, would enhance Travis AFB operations by concentrating similar areas of activities and eliminating underutilized areas. Under the No Action Alternative, some activities with similar functions such as administration, community service, and housing, would continue to be dispersed which would reduce the overall organization and effectiveness of Base operations, therefore unnecessarily inefficient work conditions would continue to exist for the 60 AMW.

Under the No Action Alternative, excess and inefficient buildings would remain at Travis AFB that would continue to degrade and require unnecessary maintenance. Some buildings would remain within the lateral clear zone, necessitating airfield waivers for the obstructions, which is a safety issue. The War Reserve Materiel warehouse would remain undersized, the combat crew training school facility would not be constructed, the fitness center would not be expanded, and the updated Communications facility would not be constructed. All these deficiencies would negatively impact the 60 AMW's ability to maintain combat readiness. Additionally, AT/FP requirements would not be met.

In general, implementation of the No Action Alternative would require that the 60 AMW continue to operate under substandard, inefficient, and in some cases, unsafe conditions. Implementation of the No Action Alternative would require that the 60 AMW continue to operate using existing infrastructure under, in some cases, substandard and inefficient conditions.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## 5.0 Cumulative Impacts and Irreversible and Irretrievable Commitment of Resources

### 5.1 Cumulative Impacts

Cumulative impacts to environmental resources result from incremental effects of an action when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed (or anticipated over the foreseeable future) is required.

To identify cumulative effects, the analysis needs to address two fundamental questions:

1. Does a relationship exist such that affected resource areas of the Proposed Action or alternatives might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If such a relationship exists, then does an EA reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur, as well as a description of what resources could potentially be cumulatively affected.

For the purposes of this analysis, the temporal span of the Proposed Action is five years and impacts were assessed as if the projects would occur within that five year period. For most resources, the spatial area for consideration of cumulative effects is Travis AFB with the exception of impacts on air quality which considers the San Francisco Bay Area Air Basin and particularly Solano County as the ROI. Similarly, impacts on resources and conditions of activities attributable to other actions within the ROI would not augment the direct and indirect effects of the installation development at Travis AFB to the extent that they would significantly increase their effect.

The 60 AMW updates facilities at Travis AFB on a continual basis. While it is not practical to catalog all minor projects that could occur over the short-term, many of the major projects in the ROI have been analyzed as the Proposed Action in the IDEA. Planning efforts in the ROI include the actions described within this EA, as well as those additional projects that are ongoing, or planned outside of the boundaries of Travis AFB. Additional projects within the ROI are discussed below.

Currently ongoing and other proposed actions over the next five years at Travis AFB are identified in **Table 5.1-1**. Those items included in **Table 5.1-1** are either already addressed by other separate, completed EIAP; EIAP that is currently underway; or EIAP that will be conducted separately in the future because the proposed actions have not been planned in sufficient detail or have the potential to impact environmental constraints such as wetlands, QD arcs, ERP sites, or special habitat. They will be the subject of future individual or comprehensive NEPA analysis. MFH is a proposed project at Travis AFB. This project includes the demolition of 1,651 units and the construction of 400 new units on Base. A previous EA conducted in 2006 concluded that there are no significant adverse impacts associated with the MFH project (USAF 2006a), but it is included in this section to recognize potential cumulative impacts.

As an active military installation, Travis AFB and its tenant organizations undergo changes in mission and training requirements in response to defense policies, current threats, and tactical and technological advances, and consequently may require new construction, facility improvements, infrastructure upgrades, and ongoing maintenance and repairs on a continual basis. Although such known construction and upgrades are a part of the analysis contained in this section, some future requirements cannot be predicted. As those requirements surface, future NEPA analysis would be conducted, as necessary.

**Table 5.1-1. Ongoing and Proposed Projects at Travis AFB**

<b>Project Name/Description</b>	<b>Area (approximate SF )</b>	<b>Anticipated Fiscal Year for Implementation</b>
<b>On-going Projects</b>		
Aerospace Ground Equipment Facility	26,922	On-going (2006)
<b>Proposed Projects over the Next Five Years</b>		
C-17 Southwest Landing Zone	445,947	2008
Global Support Squadron Facility	25,824	2009
Air Mobility Operations Group (AMOG) Global Reach Deployment Center Phase 1	196,585	2006
South Gate Bypass Road (W/C-17 Project)	Not available	2010
C-17 Nose Dock	29,762	2010
AMOG/Air Mobility Operations Squadron Operations Facility	26,362	2010
Contingency Response Wing Facilities	61,332	2008
Contingency Response Group Facility	35,508	2010
Base Civil Engineer Complex	118,833	2011
Large Fire Crash Rescue Station	31,581	2011
C-17 Road Improvements	242,724	2008
C-17 & C-5 Squadron Operations	42,287	2010
Multi-cubicle Munitions Storage	9,598	2010
Military Family Housing	1,200,000	2009-2011
<b>Total</b>	<b>2,493,265 (57.2 ac)</b>	

The goal of the IDEA is to document the known projects proposed at Travis AFB in support of their mission and the mission of tenant units; provide an environmental analysis of these projects; and prepare to implement the appropriate facility improvements as funds become available. It is quite likely that during the course of the next five years, additional projects not included in this analysis may be required. The nature of the military today is that missions are dynamic and planners at the installation level must be proactive in addressing potential impacts associated with these changes.

**Noise.** Construction noise emanating off-site as a result of the Proposed Action, the MFH, and additional projects listed in **Table 5.1-1** would probably be noticeable in the immediate construction site vicinity, but would not be expected to create long term adverse impacts. The acoustic environment on and near the airfield property is expected to remain relatively unchanged from existing conditions under proposed activities. Cumulative impacts from noise would be expected to be minimal.

**Land Use.** The proposed C&D projects described under the Proposed Action and the projects listed in **Table 5.1-1**, including the MFH, are expected to enhance overall installation planning and compatibility of functions at Travis AFB. Some existing incompatibilities would be corrected. Cumulative impacts to land use are expected to be minimal.

**Air Quality.** In general, combustive and fugitive dust emissions from proposed C&D activities under the Proposed Action, the MFH, and those projects listed in **Table 5.1-1** would produce localized, elevated air pollutant concentrations that would occur for a short duration and would not result in any long-term

impacts on the air quality of Solano County. There would be emissions associated with training conducted on the C-17 Southwest Landing Zone, however, these would largely be offset by eliminating the existing take-offs and landings associated with travel to other existing landing zones to complete that training. Any change in emissions as a result of the Landing Zone project are not expected to be significant either on their own, or cumulatively. Cumulative impacts to air quality in the County and the San Francisco Bay Area Air Basin are expected to be minimal.

**Safety.** Implementation of the Proposed Action, the MFH, or those projects listed in **Table 5.1-1** do involve ground activities that could expose workers performing the required site preparation, grading, and building construction to some risk. Strict adherence to all applicable occupational safety requirements would minimize the relatively low risk associated with these construction activities. All projects have been sited outside any QD arcs, as appropriate. Additionally, the proposed projects would include measures to enhance and correct AT/FP shortfalls as part of the facility designs. Cumulative impacts to safety are expected to be minimal.

**Geologic Resources.** In addition to the development over the course of the construction program associated with the Proposed Action, up to an additional 57 acres of surface disturbance could result over the next five years from ongoing construction associated with projects within the boundaries of Travis AFB (**Table 5.1-1**). The grading of existing soil and placement of structural fill for new facilities would not substantially alter existing soil conditions at the installation because, to a large extent, the construction described above is planned for areas where surface disturbance has previously occurred. BMPs would be used to limit soil movement, stabilize runoff, and control sedimentation at individual construction sites. Cumulative impacts to geologic resources as a result of the Proposed Action and those projects listed in **Table 5.1-1** are expected to be minimal.

**Water Resources.** As a result of the Proposed Action, there would be a *decrease* of approximately 170,898 SF (3.9 acres) in impervious surface (excluding the sewage treatment pond demolition); however, up to an additional 57 acres of impervious surface would be added as a result of the projects listed in **Table 5.1-1**. To a large extent, the construction described above is planned within areas that have been previously developed, and therefore much of the proposed construction would occur on already impervious surfaces. The 60 AMW SWPPP would be updated to include these projects and would obtain, as appropriate, coverage under the California General Industrial Activities Storm Water Permit WQO #97-03-DWQ, in addition to an NPDES General Permit for storm water discharges associated with construction activity greater than one acre. Adherence to the requirements of these permits would include implementation of BMPs to minimize the potential for exposed soils or other contaminants from construction activities to reach nearby surface waters. It is expected that cumulative impacts to water resources would be minimal.

**Biological Resources.** In general, the Proposed Action and the projects listed in **Table 5.1-1** are on the main cantonment area at sites that are highly altered by man. While the area for the Southwest Landing Zone is not highly developed, and there are areas of pooling water near the site, the area has been disturbed previously during runway development. No cumulative impacts to federal or state listed species are anticipated. The Base Environmental Management Flight would coordinate, as necessary, with the USFWS prior to implementation of construction activities to ensure that impacts to sensitive species do not occur. Cumulative impacts to biological resources are expected to be minimal.

**Cultural Resources.** Activities associated with either the Proposed Action, the MFH, or additional projects listed in **Table 5.1-1** are not expected to affect archaeological, architectural, or traditional resources. Cumulative impacts to cultural resources are expected to be minimal.

**Socioeconomics.** Activities associated with the Proposed Action, the MFH, or additional projects listed in **Table 5.1-1** are not expected to have any major adverse impacts on the economy in the ROI. Additionally, these projects are not expected to create adverse environmental or health effects and therefore no disproportionately high or adverse impacts to minority, low-income, or youth populations are expected. Cumulative impacts to socioeconomics and environmental justice are expected to be minimal.

**Infrastructure.** The proposed C&D projects associated with the Proposed Action, the MFH, or additional actions listed in **Table 5.1-1** would result in some temporary interruption of utility services and minor

hindrance of transportation and circulation during construction activities. These impacts would be temporary, occurring only for the duration of the construction period. In general, infrastructure at Travis AFB would improve under these actions. Cumulative impacts to infrastructure are expected to be minimal.

**Hazardous Materials and Waste.** The proposed C&D projects associated with the Proposed Action, the MFH, or other actions listed in **Table 5.1-1**, would generate C&D waste that would be recycled and/or taken to a local demolition landfill, as appropriate. There are no capacity issues associated with the existing landfills. Hazardous materials and wastes would be handled, stored, and disposed of in accordance with applicable regulations. Some ACM, LBP, and contaminated soils associated with ERP sites would be removed and disposed of per applicable regulations. On other sites, land use controls may be used. Cumulative impacts as a result of hazardous materials and waste management are expected to be minimal.

## 5.2 Irreversible and Irretrievable Impacts

NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented" (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Building construction material such as gravel and gasoline usage for construction equipment would constitute the consumption of non-renewable resources.

The primary irretrievable impacts of the Proposed Action would involve the use of energy, labor, materials and funds, and the conversion of some lands from an undeveloped condition through the construction of buildings and facilities. However, all of the land proposed to be utilized has been developed in the past. Irretrievable impacts would occur as a result of construction, facility operation, and maintenance activities. The irretrievable loss of energy, labor, and materials and funds associated with implementation of the Proposed Action would be inconsequential to the amount of these resources currently available and being used in other areas around Travis AFB. Direct losses of biological productivity and the use of natural resources from these impacts would be inconsequential.

## 6.0 List of Preparers

This IDEA has been prepared under the direction of the HQ AMC and the 60 AMW at Travis AFB, Solano County, California by SAIC. The individual preparers of this document are listed below.

Kate Bartz, Project Manager, SAIC

M.S., Landscape Architecture & Environmental Planning, 1994

B.S., Environmental Studies, 1987

Years of Experience: 21

Gary Bertolin, Ph.D., Senior Air Quality Scientist, SAIC

Ph.D., Meteorology and Air Quality

M.S., Atmospheric Science

B.S., Chemistry

Years of Experience: 28

Tom Daues, Program Manager, SAIC

M.S., Natural Resources

B.S., Biology

Years of Experience: 14

Sasha Gennet, Conservation Ecologist, SAIC

B.A., Philosophy, 1997

M.S., Ecosystem Sciences, 2003

Years of Experience: 12

Susan Goodan, Senior Environmental Planner, SAIC

M. Architecture, 1988

B.A., Ethics/Archaeology, 1975

Years of Experience: 17

Heather Gordon, Environmental Analyst (GIS), SAIC

B.A., Environmental Studies and Planning, 1996

Years of Experience: 7

Lorraine Gross, RPA, Senior Archaeologist, SAIC

M.S., Anthropology, 1986

B.A., Anthropology, 1975

Years of Experience: 25

Vanessa House, Environmental Analyst, SAIC

B.S., Resource and Environmental Studies, 2002

Years of Experience: 4

Tom Jensen, Deputy Project Manager, SAIC

M.A., Public Policy, 1990

B.A., Economics, 1983

Years of Experience: 20

Joseph A. Jimenez, Cultural Resources Manager, SAIC

M.A. Anthropology, 1986

B.A. Anthropology, 1984

Years of Experience, 23

Pete Rawlings, Senior Natural Resources Planner, SAIC  
B.S., Wildlife Management, 1978  
Years of Experience: 27

William Wuest, Senior Environmental Scientist, SAIC  
M.P.A., Public Administration, 1974  
B.S., Political Science, 1963  
Years of Experience: 39

## 7.0 References

- 60<sup>th</sup> Air Mobility Wing (60 AMW). 2005. Bird Aircraft Strike Hazard (BASH) Plan 91-212. 19 January.
- American National Standards Institute (ANSI). 1980. Sound Level Descriptors for Determination of Compatible Land Use. ANSI S3.23-1980.
- \_\_\_\_\_. 1988. Quantities and Procedures for Description and Measurement of Environmental Sound, Part 1. ANSI S12.9-1988.
- Bay Area Census (BAC). 2003. California, San Francisco Bay Area, Solano County, City of Fairfield, Suisun City, City of Vacaville-Census 2000 and 2005 American Community Survey Estimates. <http://www.bayareacensus.ca.gov/callifornia.htm> (downloaded on 05/10/2007).
- CALFED. 1999. CALFED Bay-Delta Program Water Transfer Program. Chapter 4, Part G. Water Transfers. March 10. URL: <http://calwater.ca.gov/>
- California Air Resources Board. 2006. Area designation maps. <http://www.arb.ca.gov>
- \_\_\_\_\_. 2007. Chart of State and Federal Ambient air Quality Standards. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>
- California Department of Fish and Game (CDFG). 2003. *Atlas of the Biodiversity of California*. California Department of Fish and Game, Sacramento, California.
- California Geological Survey. 2007. Earthquakes. [http://www.consrv.ca.gov/cgs/geologic\\_hazards/earthquakes/index.htm](http://www.consrv.ca.gov/cgs/geologic_hazards/earthquakes/index.htm)
- California Native Plant Society (CNPS). 2001. Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA. 388 pp.
- California Partners in Flight. 2000. Version 1.0. The draft grassland bird conservation plan: a strategy for protecting and managing grassland habitats and associated birds in California (B. Allen, lead author). Point Reyes Bird Observatory, Stinson Beach, CA. <http://www.prbo.org/calpif/plans.html>
- City of Fairfield. 1960. The Code of the City of Fairfield, California. Noise Regulations Article X, § 25.1403.
- \_\_\_\_\_. 2001. Draft Program Environmental Impact Report—Comprehensive Amendment to the City of Fairfield General Plan. August 2001.
- \_\_\_\_\_. 2006a. City of Fairfield General Plan- Land Use Diagram. Includes all Amendments to the Land Use Diagram through July 12, 2006.
- \_\_\_\_\_. 2006b. Economic Development: Travis AFB. [http://www.fairfield4business.com/why\\_travis.shtml](http://www.fairfield4business.com/why_travis.shtml) (downloaded on 05/17/2007).
- EDAW. nd. Draft General Plan Update, Solano County—Land Use Background Report. <http://solanocountygeneralplan.net/documents.htm>
- Federal Interagency Committee on Noise (FICON). 1992. Federal Agency Review of Selected Airport Noise Analysis Issues.
- Federal Interagency Committee on Urban Noise (FICUN). 1980. Guidelines for Considering Noise in Land Use Planning and Control. Washington, D.C. NIIS PB83-184838.
- Finegold, L.S.; Harris, C.S.; vonGierke, H.E. Community Annoyance and Sleep Disturbance: Updated Criteria for Assessing the Impacts of General Transportation Noise on People. Noise Control Engineering Journal, Jan-Feb 1994.
- Harrison, R.T. 1973. Forest Background Sound. Report to Record, ED&T 2428, USDA Forest Service, Technology and Development Center, San Dimas, California. In: Harrison, R.T., L.A. Hartmann,

- and W.J. Makel. 1990. Annoyance from Aircraft Overflights in Wilderness. NOISE-CON 90, University of Texas. Austin, Texas. October.
- Jagielski, K. and O'Brien, J. 1994. *Calculations Methods for Criteria Air Pollution Emission Inventories*, USAF, Armstrong Laboratory, AL/OE-TR-1994-0049. Brooks AFB.
- Lund, J., E. Hanak, W. Fleenor, R. Howitt, J. Mount, and P. Moyle. 2007. *Envisioning Futures for the Sacramento-San Joaquin Delta*. February. ISBN 978-1-58213-126-9.  
<http://www.ppic.org/main/publication.asp?i=671>.
- MIL-STD-882. 1993. Military Standard System Safety Program Requirements. Department of Defense, Washington, D.C. January 1993.
- Natural Resources Conservation Service (NRCS). 1974. Soil Survey of Solano County, California. April.
- \_\_\_\_\_. 2006. United States Department of Agriculture Handbook 296: Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin.
- O'Brien, Robert J. and Mark D. Wade. 2002. Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations. United States Air Force Institute for Environment, Safety and Occupational Health Risk Analysis, Risk Analysis Directorate, Environmental Analysis Division, IERA-RS-BR-SR-2001-0010, Brooks Air Force Base, Texas, January 2002.
- Occupational Safety and Health Administration (OSHA). 1983. Occupational Noise Exposure Standard. Code of Federal Regulations Title 29, Part 1910, Sec. 1910.95 (29 CFR 1910.95).
- Sawyer, J.O. and T. Keeler-Wolf. 1995. A manual of California vegetation. Sacramento, California, USA, California Native Plant Society.
- Sibley, D.A. 2003. The Sibley field guide to birds of Western North America. New York City, New York, USA. Alfred A. Knopf.
- Solano County. 2007. Planning for a Sustainable Solano County. Solano General Plan Update—Guiding Principles. Adopted by the Board of Supervisors, March 13, 2007.
- South Coast Air Quality Management District. 1993. CEQA Air Quality Handbook.
- Travis Air Force Base (AFB). nd. Fact Sheet-Travis Team.
- Unified Facilities Criteria (UFC). 2003. UFC 4-010-01, DoD Minimum Antiterrorism Standards For Buildings. 8 October.
- United States Air Force (USAF). nda. General Plan—Travis Air Force Base.  
<http://www.pscmh.com/travis/techDocs/generalPlan/web/Travis.pdf>
- \_\_\_\_\_. ndb. Installation Force Protection Guide.
- \_\_\_\_\_. 2003a. Travis Air Force Base, 60<sup>th</sup> Air Mobility Wing, Integrated Natural Resources Management Plan, September.
- \_\_\_\_\_. 2003b. Integrated Cultural Resources Management Plan, Travis Air Force Base, Fairfield, California. Prepared for USAF Air Mobility Command.
- \_\_\_\_\_. 2003c. Integrated Contingency Plan for Oil and Hazardous Substance Spill Prevention and Response. March.
- \_\_\_\_\_. 2004a. Air Force Instruction (AFI) 91-204. Safety. Safety Investigations and Reports. 11 December.
- \_\_\_\_\_. 2004b. Travis Air Force Base 60<sup>th</sup> Air Mobility Wing Storm Water Pollution Prevention Plan. March.
- \_\_\_\_\_. 2004c. Travis Air Force Base 60<sup>th</sup> Air Mobility Wing Integrated Solid Waste Management Plan (ISWMP). October.

- \_\_\_\_\_. 2004d. Hazardous Waste Management Plan. March.
- \_\_\_\_\_. 2004e. Travis AFB Integrated Solid Waste Management Plan. October.
- \_\_\_\_\_. 2004f. Travis AFB Asbestos Management Plan. March.
- \_\_\_\_\_. 2004g. Travis AFB Lead-Based Paint Management Plan. March.
- \_\_\_\_\_. 2006a. Military Family Housing Revitalization, Travis Air Force Base, California. April.
- \_\_\_\_\_. 2006b. Summary of rare, threatened, and endangered species associated with seasonal wetlands. Prepared by CH2M Hill for the U.S. Air Force Center for Environmental Excellence. Sacramento, California.
- \_\_\_\_\_. 2006c. Travis Air Force Base Comprehensive Planning Information Center: 60<sup>th</sup> AMW Headquarters Development Plan. May.
- United States Air Force (USAF) Bird-Aircraft Strike Hazard (BASH) Team. 2005. Selected Wildlife Strike Statistics. <http://afsafety.af.mil/AFSC/Bash/stats>
- United States Bureau of Economic Analysis (BEA). 2007. Regional Economic Information System. Table CA25 (NAICS), Total Full-time and Part-time Employment by Industry—California, San Francisco-Oakland-Fremont, Solano County 2005.
- United States Census Bureau. 1990. DP-2 Social Characteristics: 1990. 1990 Summary Tape File 3 (STF 3) – Sample Data. Geographic Area: California.
- \_\_\_\_\_. 2000. Census 2000 Summary File 1 (SF 1), 3 (SF 3).
- \_\_\_\_\_. 2005. American Community Survey. Selected Economic Characteristics: 2005.
- United States Department of Labor (DOL). 2005. United States Department of Labor. Bureau of Labor Statistics, National Census of Fatal Occupational Injuries in 2005. <http://stats.bis.gov/oshhome.htm>
- United States Department of Transportation (DOT). 2006. Roadway Construction Noise Model; Federal Highway Administration. U.S. Department of Transportation; Research and Innovative Technology Administration; John A. Volpe National Transportation Systems Center, Acoustics Facility, Cambridge, Massachusetts. January.
- United States Environmental Protection Agency (USEPA). 1974. Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety. EPA Report 550/9-74-004.
- \_\_\_\_\_. 1998. Characterization of Building-Related Construction and Demolition Debris in the United States. Prepared by Franklin Associates. June.
- \_\_\_\_\_. 2007. Surf Your Watershed: Suisun Bay Watershed Profile. [http://cfpub1.epa.gov/surf/huc.cfm?huc\\_code=18050001](http://cfpub1.epa.gov/surf/huc.cfm?huc_code=18050001)
- United States Geological Survey (USGS). 1995. Groundwater Atlas of the United States: California, Nevada. HA 730-B. [http://capp.water.usgs.gov/gwa/ch\\_b/index.html](http://capp.water.usgs.gov/gwa/ch_b/index.html)

**THIS PAGE INTENTIONALLY LEFT BLANK**

**APPENDIX A**

**PROPOSED PROJECTS CATEGORIZED LISTS**

**THIS PAGE INTENTIONALLY LEFT BLANK**

**Table A-1. Proposed Demolition Projects**

<b>Map ID</b>	<b>Project Number</b>	<b>Project</b>	<b>Year Proposed</b>	<b>Total Area Removed (SF )</b>	<b>Project Description</b>
D-1	XDAT961031M4	Demo Bldg 242 (Squad Ops)	2009	42,986	Demolish Bldg 242
D-2	XDAT971123	Demo Bldg 828 (SFS Control)	2009	32,743	Demolish Bldg 828
D-3	XDAT981175	Demolish Thrift Shop	2008	58,200	Demolish Thrift Shop
D-4	XDAT971136	Demo Bldg 755 (Shp Acft Gen Purp)	2009	58,706	Demolish Bldg 755
D-5	XDAT101077	Demo Bldg 1185 (Rapcon)	2009	145,700	Demolish Bldg 1185 (Rapcon) and the adjacent concrete Pad #337 and Basin 257. They have been listed as airfield obstructions #337 & # 257.
D-6	XDAT101284	Demo Bldg 707 Petrol Ops	2009	6,333	Demolish office Building 707
D-7	XDAT991017	Demo Dorm 1328	2010	25,120	Demolish Dormitory 1328
D-8	XDAT991015	Demo Dorm 1310	2011	25,120	Demolish Dormitory 1310
D-9	XDAT101228	Demo Bldg 8, Lighting Vault	2010	1,906	Demolish lighting vault (Building 8) after removal of electrical wiring that supplies Building 4
D-10	XDAT991016	Demo Dorm 1327	2010	25,120	Demolish Dormitory 1327
D-11	XDAT991018	Demo Dorm 1329	2009	25,120	Demolish Dormitory 1329
D-12	XDAT051034	Demo Sewage Treatment Drying Beds	2007	2,500,000	Demolish abandoned sewage treatment ponds. Demolish the reinforced concrete imhoff tanks and digesters, oxidation ponds, settling ponds, sludge drying ponds, aeration ponds, chlorine basin, and all associated out buildings, equipment, piping and structures.
D-13	XDAT051087	Demo Bldg 253 (Electric Station)	2009	144	Demolish Building 253 in conjunction with environmental demolition.
D-14	XDAT051040	Demo Bldg 1032 Including Utilities	2007	240	Remove buildings and plumbing next to spot 301 on the 300 ramp.
D-15	XDAT051038	Demo Bldg 756 (Cryogenics)	2009	112	Demolish office Building 756.

Table A-2. Construction Projects

Map ID	Project Number	Project	Year Proposed	Total Area Constructed (SF)	Project Description
C-1	XDAT048007	War Reserve Materiel Warehouse Expansion	2010	45,483	Expand WRM Warehouse.
C-2	XDAT943008	In Flight Kitchen/Fleet Service	2011	23,489	Reinforced concrete foundation and floor slab, structural steel frame, exterior finish insulation system, sloped metal roof, all utilities, and necessary support. Refrigerated and dry storage areas, food preparation/support space including kitchen
C-3	XDAT103003	Consolidated KC-10 Training Facility	2008	24,000	Construct 2-story 24,000 SF combat crew training school facility
C-4	XDAT091001	Dormitory (96 Rm)	2010	23,994	Construct 96-room dormitory
C-5	XDAT953015P2	Add to Fitness Center	2009	45,246	Reinforced concrete slab and foundation, masonry walls, structural steel framing, sloped roof, fire protection, and necessary support. Includes space for weight lifting, ergonomic training, men and women's locker rooms, showers, and latrines.
C-6	XDAT063009	Communications Facility	2010	72,600	Build a new facility capable of housing the 60 <sup>th</sup> Communication Squadron. Three flights, various work centers, personnel, and assets, to include the Base telephone switch, BNCC, C2 and TCC. Location and size to be determined at a later date as studies are underway.
C-7	XDAT081004	Addition to Bldg 918	2008	1,625	Addition of 1,625 SF of space to facility 918 for an alternate Network Control Center.

**Table A-3. Infrastructure Projects**

<b>Map ID</b>	<b>Project Number</b>	<b>Project</b>	<b>Year Proposed</b>	<b>Total Project Size (SF)</b>	<b>Project Description</b>
I-1	XDAT051008	Replace bulk fuel transfer lines	2010	62,408	Replace 7,948 meters of bulk fuel transfer lines from Bulk Fuel Storage Area F to Hydrant Fuel Pump house Areas B, C, G, and H with pipe including protective wrap, warning tape, impressed current cathodic protection system with test points, full port valves.
I-2	XDAT971170C2	Pave parking lot, Bldg 720	2010	10,300	Pave parking lot of Bldg 720; install irrigation system.
I-3	XDAT031076	Pave area north of Bldg 1733	2010	29,915	Asphalt pavement required, area north side of pump house. Measures 75 linear feet (LF) by 37 LF. At this time the area is covered with a rock surface, this area is used to park pickup trucks (2), a utility tractor (2) and fuel browsers (3).

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **APPENDIX B**

### **FEDERAL APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## Appendix B

### Federal Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

#### Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (Air Force Instruction [AFI] 32- 7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near United States Air Force (USAF) installations.

#### Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on an Air Force installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

#### Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990 recognize that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action could have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a federal agency might also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives federal immunity from complying with the CAA and states all federal agencies will comply with all federal- and state-approved requirements.

#### Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF

personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet federal safety and health requirements. This instruction applies to all USAF activities.

## Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation. Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a water body can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source in order to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Safe Drinking Water Act (SDWA) of 1974 establishes a federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require the USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted flood proofing and flood protection to include elevating structures above the base flood level rather than filling in land.

## Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970) states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001) creates a more comprehensive strategy for the conservation of migratory birds by the federal government. EO 13186 provides a specific framework for the federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

## Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an

indispensable and irreplaceable part of Indian life. It also recognized the lack of federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the use of peyote cactus as a religious sacrament. federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders. The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and federal agencies on historic preservation issues. Section 106 of the NHPA directs federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP. The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain “cultural items,” defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by federal agencies. Cultural items discovered on federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on federal or tribal land must be reported to the appropriate American Indian tribe and the federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971) directs the federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. federal agencies are required to locate and evaluate all federal sites under their jurisdiction or control which may qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (May 24, 1996) provides that agencies managing federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners’ access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003) orders federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

### **Socioeconomics and Environmental Justice**

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) directs federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agency-wide environmental justice strategies. The strategy must list “programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations.” A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each federal agency.

### **Hazardous Materials and Waste**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a federal “Superfund” to respond to emergencies immediately. Although the “Superfund” provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Oil Pollution Act (OPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. EO 12856, *Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements* (August 3, 1993) requires federal agencies to comply with the provisions of the PPA and requires federal agencies to ensure all necessary actions are taken to prevent pollution. In addition, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA.”

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. EO 12856 requires federal agencies to comply with the provisions of EPCRA. If a federal agency acquires a contaminated site, it can be held

liable for clean-up as the property owner/operator. A federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 U.S. Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense. The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated bi-phenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and can cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any federal agency having jurisdiction over a property or facility must comply with all federal, state, interstate, and local requirements concerning lead-based paint.

## **APPENDIX C**

### **INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE AND DISTRIBUTION LIST**

**THIS PAGE INTENTIONALLY LEFT BLANK**

**INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR  
ENVIRONMENTAL PLANNING (IICEP) CORRESPONDENCE AND DISTRIBUTION LIST  
FOR INSTALLATION DEVELOPMENT AT TRAVIS AIR FORCE BASE, CALIFORNIA**

**Federal Agencies**

U.S. Environmental Protection Agency, Region 9  
Director, Officer of Federal Activities  
75 Hawthorne Street  
San Francisco, CA 94105

U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
CA/NV Operations Office  
2800 Cottage Way, Room W-2606  
Sacramento, CA 95825

**State Agencies**

State of California Clearinghouse  
Governor's Office  
1400 Tenth Street, Room 121  
Sacramento, CA 95814

Dr. Knox Mellon  
State Historic Preservation Officer  
Department of Parks and Recreation  
P.O. Box 942896  
Sacramento, CA 94296-0001

**County Agencies**

Ken Solomon  
Solano County  
Department of Resource Management  
675 Texas Street, Suite 5500  
Fairfield, CA 94533

**City Agencies**

City of Fairfield  
Community Development Department  
1000 Webster Street  
Fairfield, California 94533

City of Vacaville  
Community Development Department  
650 Merchant Street  
Vacaville, CA 95688

City of Suisun City  
Community Development Department  
701 Civic Center Blvd  
Suisun, CA 94588

**Public Libraries**

Fairfield-Suisun Community Library  
1150 Kentucky Avenue  
Fairfield, CA 94533

Vacaville Public Library  
1020 Ulatis Drive  
Vacaville, CA 95687

Suisun City Library  
333 Sunset Avenue  
Suisun City, CA 94585

Mitchell Memorial Library  
510 Travis Avenue (Bldg 436)  
Travis AFB, CA 94535

STATE OF CALIFORNIA  
PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298

Arnold Schwarzenegger, Governor

*Rud*  
**RECEIVED**  
NOV 16 2007



November 5, 2007

Rudy Pontemayor  
U.S. department of the Air Force  
60 CES/CECP, 411 Airmen Drive  
Travis AFB, CA 94535-2001

RE: Installation Development Environmental Assessment, SCH# 2007054003

Dear Mr. Pontemayor:

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the County be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way (ROW).

Safety factors to consider include, but not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to the increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way. Any project that includes a modification to an existing crossing or proposes a new crossing is legally required to obtain authority from the Commission. If the project includes a new proposed crossing, the Commission will be a responsible party under CEQA and the impacts of the crossing must be discussed within the environmental documents.

Of specific concern is the impact of any proposed development on the existing at-grade highway-rail crossing on Peabody Road.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the County.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Kevin Boles', written over a horizontal line.

Kevin Boles  
Environmental Specialist  
Rail Crossings Engineering Section  
Consumer Protection and Safety Division

cc: Terrel Anderson, Union Pacific Railroad

**THIS PAGE INTENTIONALLY LEFT BLANK**



STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT



ARNOLD SCHWARZENEGGER  
GOVERNOR

CYNTHIA BRYANT  
DIRECTOR

November 20, 2007

*RPR*  
**RECEIVED**

**NOV 29 2007**

Rudy Pontemayor  
U.S. Air Force  
60 CES/CECP  
411 Airmen Drive  
Travis AFB, CA 94535-2001

Subject: Installation Development Environmental Assessment, Travis Air Force Base  
SCH#: 2007054003

Dear Rudy Pontemayor:

The State Clearinghouse submitted the above named Joint Document to selected state agencies for review. The review period closed on November 19, 2007, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts  
Director, State Clearinghouse

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2007054003  
**Project Title** Installation Development Environmental Assessment, Travis Air Force Base  
**Lead Agency** U.S. Air Force

---

**Type** JD Joint Document

**Description** The proposed action is to implement continuing installation development projects as found in the community of all existing approved development plans for Travis AFB. The projects analyzed in the IDEA fall under three categories: facilities demolition projects, facilities construction projects (to include renovations, alterations, and repairs), and infrastructure projects. The analysis contained in this IDEA capitalizes on the knowledge gained from previously prepared and approved environmental impact analysis process (EIAP documents for similar types of projects to determine the direct, indirect, and cumulative effects of projects as an integral element of the installation's development.

---

**Lead Agency Contact**

<b>Name</b>	Rudy Pontemayor		
<b>Agency</b>	U.S. Air Force		
<b>Phone</b>	(707) 424-7517	<b>Fax</b>	
<b>email</b>			
<b>Address</b>	60 CES/CECP 411 Airmen Drive		
<b>City</b>	Travis AFB	<b>State</b> CA	<b>Zip</b> 94535-2001

---

**Project Location**

**County** Solano  
**City** Fairfield, Suisun City  
**Region**

**Cross Streets**

**Parcel No.**

**Township**

**Range**

**Section**

**Base**

---

**Proximity to:**

**Highways**

**Airports**

**Railways**

**Waterways**

**Schools**

**Land Use** Travis Air Force Base

---

**Project Issues** Air Quality; Biological Resources; Geologic/Seismic; Noise; Public Services; Solid Waste; Toxic/Hazardous; Water Quality; Water Supply; Landuse; Other Issues

---

**Reviewing Agencies** Resources Agency; Regional Water Quality Control Board, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Office of Emergency Services; Caltrans, Division of Aeronautics; Caltrans, District 4; Air Resources Board, Airport Projects; Integrated Waste Management Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Toxic Substances Control; Native American Heritage Commission

---

<b>Date Received</b>	10/19/2007	<b>Start of Review</b>	10/19/2007	<b>End of Review</b>	11/19/2007
----------------------	------------	------------------------	------------	----------------------	------------

---

Note: Blanks in data fields result from insufficient information provided by lead agency.